BY ORDER OF THE SECRETARY OF THE AIR FORCE

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Flying Operations

MANAGEMENT AND CONFIGURATION REQUIREMENTS FOR AIRCREW FLIGHT EQUIPMENT (AFE)

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This volume implements Air Force Policy Directive (AFPD) 11-3, *Aircrew Flight Equipment*, and AFI 11-301, Volume 1, *Aircrew Flight Equipment (AFE) Program*. This volume prescribes policy and incorporates the intent of AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*. It establishes Air Force standards and defines management and configuration requirements for aircrew flight equipment items. Air Force Reserve and Air National Guard (ANG) must comply with the requirements for Aircrew Flight Equipment in this publication. This publication may be supplemented as any level, but all direct supplements must be routed for coordination prior to certification and approval to the OPR of this publication, HQ USAF/A3O-AI. Send comments and suggested improvements to this instruction on an Air Force (AF) Form 847, *Recommendation for Change of Publication*, through the chain of command, in accordance with (IAW) Air Force Instruction (AFI) 33-360, Volume 1, *Publications and Forms Management*, to HQ USAF/A3O-AI, 1480 Air Force Pentagon, Washington DC 20330-1480. Requests for waivers must be submitted through the chain of command to the appropriate Tier waiver approval authority. Intervening levels will evaluate all recommendations and forward the AF Form 847 to the next echelon. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this instruction does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This Interim Change provides tiered waiver authorities as prescribed in AFI 33-360, *Publications and Forms Management.* Miscellaneous other changes are provided. A margin bar indicates newly revised material.

Chapter 1

ROLES AND RESPONSIBILITIES

1.1. HQ USAF/A3O-AI (Director, Force Integration Division) shall:

1.1.1. HQ USAF/A3O-AI serves as the approval authority for waiver requests for this publication.

1.1.2. HQ USAF/A3O-AI will establish Lead Commands for the purpose of equipment management and improvement procedures. (see **Attachment 2**).

1.1.2.1. Lead Commands are designated for aircraft, aircrew, and passenger AFE systems related to various MDSs, to assist with Air Force Materiel Command (AFMC) Acquisition and Sustainment organizations on subject matter expertise input. This process ensures the operational safety, suitability, and effectiveness (OSS&E) baselines are preserved IAW AFI 63-1201, *Life Cycle Systems Engineering*. Lead/using MAJCOM will ensure coordination is made to protect the OSS&E baseline of commercial products used on aircraft IAW AFI 63-1201.

1.1.2.2. Lead commands are not responsible to fund AFE assets for using commands. Each command is responsible for its own funding of AFE requirements. Lead commands will fund AFE Unit Type Code (UTC) logistics detail (LOGDET) requirements when a gained command is required to perform a lead command mission.

1.2. MAJCOM/A3 and ANG/A3 Shall:

1.2.1. Equipment in **Chapter 2** and **Chapter 3** of this instruction is assigned a Lead Command. The Lead Command is responsible as an overall subject matter expert (SME) point of contact for AFMC AFLCMC Acquisition and Sustainment Teams with respect to management and improvement efforts. The designated Lead Command will act as the Lead Command determination on all AFTO 22, *Technical Order Improvement Report and Reply*, reports submitted by using Command Control Points (CCP). The Lead Command CCP will be the final evaluator on these reports prior to routing to Air Force Materiel Command functions for final action and disposition. (T-2)

1.2.2. MAJCOMs authorizing use of Commercial Off-the-Shelf (COTS) items unrelated to the 412A System (TO 00-25-06-2-1) equipment work unit code manual will ensure TO guidance or commercial manuals are provided to units to ensure COTS items are properly maintained IAW AFI 63-1201. Request that commercial manuals be assigned TO numbers through AFMC functions. (T-2)

1.2.2.1. COTS/NDI (Non-Developmental Items) items affecting the OSS&E baseline of, or modify, items identified as part of the 412A System (TO 00-25-06-2-1) must be approved by the sustaining Engineering Support Activity. Lead/using MAJCOM will ensure coordination is made to protect the OSS&E baseline of commercial products used on aircraft IAW AFI 63-1201. (T-2)

1.2.2.2. COTS/NDI items changing the integration of items identified as part of the 412A System (TO 00-25-06-2-1) must be approved by the sustaining Engineering Support Activity. (T-2)

1.2.2.3. AFE is critical life sustaining/saving equipment and must only be purchased from approved sources. Wing Contracting offices will only purchase COTS/NDI items from Engineering Support Activity approved vendors. This may often result in AFE COTS/NDI items being purchased as Sole Source Items. Questions concerning the authorized purchase of AFE COTS/NDI items should be directed to AFLCMC/WNU. (T-2)

1.2.3. Publish TO Options list for MAJCOM and MAJCOM-gained units. Post final version to MAJCOM AFE SharePoint or Portal website. Non-Lead Command MAJCOMs will consider Lead Command TO Options list(s) when developing their MAJCOM option selections. (T-2)

1.2.4. Convene biennial Survival Component Working Group with SERE. (T-2)

1.2.4.1. SERE proposes components to be packed in survival vests and kits. (T-2)

1.2.4.2. AFE will advise SERE and select survival components on their practicality from a technical and space available basis with regards to packing components into survival kits and vests. (T-2)

1.2.4.3. AFE and SERE will follow the intent of Federal Aviation Administration (FAA) guidance for AFE maintained survival components installed in multi-place life rafts and passenger safety equipment. (T-2)

1.3. Operations Group Commanders Shall: Ensure all crewmembers and passengers wear or have access to the required AFE for the route of flight and duration of the mission. Commercially procured items are not authorized for use without prior approval or safe-to-fly recommendation by the respective AFE Single Item Manager and MAJCOM AFE office of primary responsibility IAW AFI 11-301, Volume 1. (T-2)

1.4. Operations Group AFE Superintendent (AFES) and AFE Officer (AFEO) Shall: Prior to use, ensure newly developed (COTS/NDI) AFE items pursued by units for Air Force aircraft as well as for aircrew use is evaluated and approved using AFLCMC/WNU, Human Systems Division, requirements. (T-2)

1.5. Squadron Level AFE Function Shall:

1.5.1. Store, handle, service, and account for items part of 412A System (TO 00-25-06-2-1) equipment work unit code manual. (T-2)

1.5.2. Inspect and repack pre-meditated parachutes, parachutist oxygen systems, integrated survival vest and body armor, survival kits, life rafts and inner and outer life raft accessory containers, life preservers, and applicable components. Inspect aircraft installed AFE oxygen (O2) equipment, emergency recovery parachutes, protective clothing kits (PCK), personnel restraint harnesses and all other aircrew life sustaining and survival equipment as identified by this and other AF guidance. (T-2)

1.5.3. Ensure passenger demonstration equipment is available and pre-positioned aboard all passenger-carrying aircraft. (T-2)

1.5.4. Pre-position a sufficient quantity of towelettes (70 percent isopropyl alcohol) aboard each aircraft for crewmembers to disinfect pre-positioned O2 masks on multi-place aircraft. (T-2)

1.5.5. Maintain applicable flight simulator and egress procedural training AFE. MAJCOMs will specify frequency and procurement procedures as agreed upon. (T-2)

1.5.6. AFE personnel, to include those assigned to Guardian Angel (GA), Special Tactics Squadron (STS), and Test Parachutist Program (TPP) units, are not responsible for storing, handling, servicing, or accountability of the following items: Thermos jugs, aircraft fire extinguishers, aircraft portable O2 cylinders, pre-breather O2 assemblies, high altitude oxygen cylinder assemblies, aircraft oxygen regulators, ground crew headsets, flak helmets, flak vests, ground crew chemical defense equipment, pyrotechnic flare pistols, E-and-E kits, passenger service equipment, aircraft first aid kits, hand sanitizers, aircraft night vision goggle lighting components, contact lens and/or contact lens supplies, ground crew night vision devices, rear vision devices, Emergency Vision Assurance Systems (EVAS), medications (including "go pills"), aircrew tool kits, luggage or baggage loading equipment, non-AFE support equipment, gun or ammunition boxes, binoculars, ground command pointers, Reduced Oxygen Breathing Device/Reduced Oxygen Breathing Environment (ROBD/ROBE), aircrew headsets, cooling vests, firefighter's gloves, escape slide covers or items not related to the 412A System (TO 00-25-06-2-1) work unit code manual. Exception: GA, STS and TPP AFE personnel may be responsible for pre-breather O2 assemblies, high altitude oxygen cylinder assemblies, flak helmets, binoculars and ground-crew night vision devices. MAF units will follow the Air Mobility Command Portable High Altitude High Pressure Oxygen System Concept of Employment for the Knight Aerospace Portable High Altitude High Pressure Oxygen System (HPOS). (T-2)

1.5.6.1. Before an item is introduced for AFE responsibility, MAJCOMs must receive approval from AFMC to establish required acquisition and sustainment support. (T-2)

1.5.6.2. MAJCOMs/Systems Program Offices (SPO) must notify AF/A3O-AI before any items are levied upon AFE in order to establish manpower and training costs. (T-2)

1.5.7. During wartime contingencies, local or higher headquarters Inspector General Exercises, Readiness Inspections (RI), mobility exercises, Readiness Assistance Visits (RAV), generation exercises, etc., AFE personnel must be available to perform mission-essential duties to sustain AFE operations (i.e., AFE issue, fitting and inspection, aircraft-installed AFE configurations, pre-deployment AFE briefings, Aircrew Contamination Control Area [ACCA] operations, AFE contamination mitigation, etc.). Ensure AFE personnel are not assigned duties that will detract from wartime proficiencies and requirements. (T-2)

1.5.8. AFE sections supporting Forward Area Refueling Point (FARP) and Aerial Bulk Fuel Delivery System (ABFDS) teams will maintain the team's night vision devices (NVD), helmets and masks assemblies in direct support of aircraft operations. The unit providing the administrative support to the team will purchase or provide the funding for the flight equipment and training. (T-2)

1.5.9. Deleted

1.5.9.1. Deleted

1.5.9.2. Deleted

1.5.10. F-35 units will adhere to the guidance in this publication to the maximum extent possible while still operating under program guidance and Joint Technical Data. (T-2)

1.5.10.1. Despite the ACC AFE Staff's ongoing efforts to ensure the F-35 program is in compliance with this instruction, we expect the inherent programmatic differences within the F-35 program, to drive changes to our current Air Force policies. Therefore, selective guidance included in this instruction may not be capable of implementation during the initial F-35 fielding. When this is the case, F-35 units will notify (via memorandum) the ACC 1P0 Functional Manager with the following information (T-2):

1.5.10.1.1. Reference for guidance not applicable to F-35 (page and paragraph)

1.5.10.1.2. Reason the guidance is not applicable for F-35

1.5.10.1.3. Process that will be used in lieu of the guidance as identified in "a" above

1.5.10.1.4. Verbiage to be included in the next re-write of the affected instruction to account for the lack of appropriate guidance

1.5.10.2. The ACC 1P0 Functional Manager will approve/disapprove all requests on a case-by-case basis. Approved requests will apply to all F-35 units and will remain in effect until included in this publication. (T-2)

1.6. Avionics Flight Shall: Ensures AFE JHMCS and similar approved systems' issues are routed through AFEO/AFES for resolution. Coordinates inspection of JHMCS maintenance helmets through AFEO/AFES. (T-3)

1.7. Base Medical Treatment Facility (MTF) Shall:

1.7.1. Custom oxygen masks are approved by Flight Surgeon's office and molded by the Dental Clinic. (T-2)

1.7.2. Creates or molds aircrew earpieces for ACCES/PACS aircrew earpieces for these devices.

1.7.3. The MTF Optometry Clinic provides inter-pupillary distance (IPD) measurements for aircrew laser eye protection and night vision devices (NVDs). (T-2)

Chapter 2

MANAGEMENT AND CONFIGURATION OF AIRCREW FLIGHT EQUIPMENT

2.1. General Management and Configuration Guidance.

2.1.1. AFE functions will maintain equipment in accordance with applicable TOs and this instruction, without deviation, unless approved through the waiver process. All items in this chapter are waiver authority T-1 unless otherwise specified.

2.1.2. This chapter is intended to be used for management and configuration guidance not specifically covered in TOs or commercial manuals. Guidance sent to field units in message format should be incorporated into the applicable publication at each update or revision. This chapter defines Lead Commands for each equipment item. (T-1)

2.1.3. Operational equipment will not be used for aircrew training purposes; exceptions are survival radios, Polarized Lead Lanthanum Zirconate Titanate (PLZT) Ceramic Material Flash Blindness Goggles, ACCA processing system, Joint Chemical Agent Detectors (JCAD), Aircrew Laser Eye Protection (ALEP), survival/rescue radio/locating systems, NVDs and Phantom O2 equipment and pre-meditated parachute systems. Maintain training assets in sufficient quantities to allow each student hands-on training. Training equipment quantities will be driven by the average class attendance numbers not to exceed applicable allowance standards (AS). (T-1)

2.2. Anti-Exposure Suits.

2.2.1. Multi-place, Non-ejection Seat Anti-exposure Suit Guidance. Lead Command—AMC.

2.2.1.1. Anti-exposure suits are required to be pre-positioned on multi-place, non-ejection seat, aircraft planned flights above 78 degrees north or below 60 degrees south. Specific quantities are governed by AFI 11-2MDS Specific Volume 3, Addenda A. If no MDS Addenda A exists, install two each suits when meeting the above criteria or follow the applicable aircraft configuration table in **Chapter 3** of this instruction. AFE will ensure a process is in place with the Current Operations Flight or Plans and Scheduling Flight to notify AFE when flights are planned meeting the above criteria for aircraft configuration purposes. (T-1)

2.2.1.2. Quick-donning, non-fitted anti-exposure suits. (T-1)

2.2.1.2.1. CWU-16/P Anti-exposure Suit. Lead Command—AMC. The CWU-16/P satisfies the anti-exposure requirements in this instruction. (T-1)

2.2.1.2.2. Multifab Survival Limited (MSL) Anti-exposure Suit. Lead Command—PACAF. All users will ensure system is used IAW safe-to-fly recommendation dated 27 January 2004. As the approving authority, AFLCMC/WNU maintains OSS&E responsibility. (T-1)

2.2.2. Fighter Ejection Seat and Vertical Lift Aircraft Anti-Exposure Suit Guidance. Lead Command—ACC. (T-1)

2.2.2.1. Deleted

2.2.2.2. Constant wear anti-exposure suits will be worn by crewmembers of ejection seat aircraft on any preplanned overwater flight when the water temperature is 60F/15.5C or less. (T-1)

2.2.2.3. Operations Group Commanders will ensure their aircrews are fitted with a personnel anti-exposure suit IAW Technical Data prior to their first flight requiring an anti-exposure suit. Aircrew will not fly missions requiring anti-exposure suits unless they have a suit fit to them IAW applicable technical data. Units will provide diver's gloves for use with constant wear anti-exposure suits as directed by MAJCOM. Gloves may be issued to the aircrew before flight. (T-1)

2.2.2.4. If the water temperature ranges between 60F (15.5C) and 51F (10.5C), and the local air temperature is 70F (21.2C) or greater, the operations group commander (or equivalent) may waive the requirement to wear the anti-exposure suit after considering the following factors (T-1):

2.2.2.4.1. Climate zone and existing weather throughout range of flights.

2.2.2.4.2. Operational requirements.

2.2.2.4.3. Number and type of aircraft participating in sortie.

2.2.2.4.4. Time of flight over water.

2.2.2.4.5. Distance from land.

2.2.2.4.6. Mission altitude.

2.2.2.4.7. Risk based on type of sortie.

2.2.2.4.8. Degree of surveillance over the mission area.

2.2.2.4.9. Location, availability and capability of Search and Rescue (SAR) forces.

2.2.2.4.10. Winds, wave height, and their impact on SAR operations.

2.2.2.4.11. Local air temperature is defined as the air temperature in the area where the mission is flying over water, not the temperature over land or at home station.

2.2.3. Bomber aircraft Anti-exposure Suit guidance. Lead Command—AFGSC.

2.2.3.1. Aircrews will wear anti-exposure suits on sorties overflying oceans with water temperatures 60F/15.5C or less. Operations group commander (or equivalent) may waive this requirement for bomber aircraft, permitting aircrew to carry and don/doff during flight as required by flight route and potential hazards. When waiving this requirement, operations group commanders will consider the factors listed in **paragraph 2.2.2.4**. (T-1)

2.2.3.2. The operations group commander may consider the wear of anti-exposure suits in waters above 60F (15.5C) as wear of the suits will maximize time available for rescue crews to recover personnel. (T-1)

2.3. Anti-G Garments. Lead Command—ACC.

2.3.1. Anti-G garments will be worn on all ejection seat aircraft IAW MDS instructions. (T-1)

2.3.1.1. If the MDS instructions do not specify minimum "G" limits for wears, anti-G Garments are required during all flights in aircraft equipped with anti-G systems when 2 or more "Gs" are anticipated. (T-1)

2.3.1.2. U.S. Navy and other services' anti-G garments are not authorized in USAF aircraft. Any exception to this guidance will be listed in TO 14-1-1 under Anti-G garment authorizations or through a Safe to Fly (StF) process and guidance from AFE program office. (T-1)

2.3.1.3. F-16 pilots and passengers will be briefed on G-suit/knee interference with the F-16 side stick during ejection seat egress training. (T-1)

2.3.1.4. Aircrews required to wear anti-exposure suits as well as aircrew chemical defense ensembles will have a second anti-G garment fitted for use with these items. F-22 pilots will have two (2) full coverage anti-G suits and two (2) upper pressure garments for each pilot. (T-1)

2.3.1.5. Record inspections and fit checks in accordance with MAJCOM and/or local guidance, or applicable database on AFTO Form 335, *Anti-G and Constant Wear Anti-Exposure Suit Inspection Record*. (T-1)

2.3.1.6. If aircrew are issued two Anti-G ensembles, both ensembles will be inspected and fit initially. However, only the primary use ensemble requires periodic fit check. Note: If spare ensemble is used, ensure proper fit check is accomplished before flight. (T-1)

2.3.1.7. With the exception of the MC-1 knife or riser cutter, no additional items will be attached to the anti-G garment unless authorized by appropriate TOs. (T-1)

2.4. Multi-Climate Protection System (MCPS). Lead Command—PACAF.

2.4.1. Aircrews may use the Multi-Climate Protection System (MCPS) for all flight operations when cold weather clothing is required. The MCPS is intended to be integrated with current flight clothing and equipment. The system is tailored to the individual's and mission needs by adding or removing layers of garments. The MCPS ensemble uses a modular layering system allowing the user to select the appropriate configurations for the expected operating environment without increasing garment bulk to a point that is detrimental to flight safety. (T-3)

2.4.2. Requirements for carrying and/or wearing of the MCPS will be in accordance with MAJCOM, wing and/or flying squadron instructions. (T-2) Refer to **Table 2.1** *Cold Weather Equipment* and **Table 2.2** *MCPS Identifiers* for additional details.

2.5. Aircrew Oxygen Masks.

2.5.1. General Aircrew Oxygen Mask Guidance:

2.5.1.1. Each aircrew member will possess an individually issued oxygen mask as dictated by applicable AFI 11-2MDS, Volume 3. (T-1)

2.5.1.2. Aircrew members flying high altitude airdrop missions must be individually fitted with an oxygen mask. (T-1)

2.5.1.3. During inspections, completely disassemble aircrew issued oxygen masks and aircraft installed masks per TO guidance or as directed by this instruction for specific mask types. More frequent inspections may be required if deployed conditions dictate. (T-2)

2.5.1.4. AFTO Form 334, *Helmet and Oxygen Mask/Connector Inspection Data*, or computer-generated products will be annotated to show the date of complete disassembly and cleaning. (T-3)

2.5.1.5. The next inspection due date will be placed on the oxygen mask in a wing standardized position. Aircraft with pre-positioned Quick Don and Passenger Oxygen Masks will have the due date annotated on the AFTO Form 46, *Prepositioned Aircrew Flight Equipment*. Exception: Parachutists' oxygen masks will not have due date labels affixed to them. (T-2)

2.5.1.6. A specific area in the AFE section will be designated for storage of aircrew oxygen masks. AFE personnel will perform postflight inspections of all masks used for flight. MAJCOMs may direct aircrew to perform their own postflight inspection. Aircrew will perform postflight inspections on masks when away from home station without AFE support. (T-1)

2.5.2. Specific Aircrew Oxygen Masks Guidance:

2.5.2.1. MBU-12/P. Lead Command—AMC.

2.5.2.1.1. Mobility Air Force (MAF) may use either MBU-12/P or MBU-20/P series masks.

2.5.2.1.2. MBU-12/P masks will be installed on all E-4B aircraft oxygen regulating systems (142 positions) with 12 spares pre-positioned. (T-1)

2.5.2.2. MBU-20/P Series. Lead Command—ACC.

2.5.2.2.1. MBU-20/P series masks are available in MBU-20/P for pressure breathing for G (PBG) and MBU-20A/P for non-PBG. (T-1)

2.5.2.2.2. MBU-20/P series masks and MBU-12/P masks do not mate into the aircrew helmet bayonet receiver at the same angle. If units elect to use MBU-20/P series mask and also are equipped with MBU-19/P Aircrew Eye/Respiratory Protection masks (based off the MBU-12/P fit), they must modify aircrew helmet bayonet receivers IAW TO 14P3-4-151 to allow the angle of the bayonet to be changed as it enters the bayonet receiver. As an alternative, units may use rotatable bayonet receivers once approved in TO 14P3-4-151. (T-1)

2.5.2.3. AWACS Mask. Lead Command—ACC.

2.5.2.4. Quick Don Folding Mask Assembly, 358 Series. Lead Command—AMC.

2.5.2.4.1. The 358-1506V-4 and 358-1506V-5 are the preferred 358-1506 Series configurations. Units will upgrade 358-1505V, V-1, V-2 masks to V-4 and V-5 configurations as approved by aircrafts SPOs. The V-4 and V-5 configurations provide one-piece mask and goggle for enhanced smoke and fume protection. (T-1)

2.5.2.4.2. Conduct routine inspections of aircraft-installed 358 Series masks on 30-day intervals. Complete disassembly and cleaning inspections are accomplished at least every 120 days. (T-1)

2.5.2.4.3. Quick Don assemblies pre-positioned on the flight deck of E-4B aircraft are contractually controlled by Boeing. (T-1)

2.5.2.4.4. AFE units with KC-10A aircraft will maintain 358-1390V Series masks IAW current commercial maintenance contract and agreements. (T-1)

2.5.2.5. Quick Don Folding Mask Assembly, 359 Series. Lead Command—AMC. The 359 Series Quick Don Mask is unique to the C-21A and T-1 aircraft and will be maintained IAW the accompanying commercial technical manual and support contract agreements. (T-1)

2.5.2.6. Emergency Respiratory Oxygen Systems (EROS) Mask. Lead Command—AMC. EROS masks are typically installed on Operational Support Aircraft/Very Important Person Special Air Mission (OSA/VIPSAM) aircraft and will be maintained IAW their commercial manual and commercial maintenance support agreements. (T-1)

2.5.2.7. Custom Made Oxygen Mask. Lead Command—AFMC.

2.5.2.7.1. When AFE determines an aircrew cannot be fit properly with a standard issue oxygen mask, they will refer the aircrew member to the Flight Surgeon to initiate custom made oxygen mask procedures. (T-1)

2.5.2.7.2. The Flight Surgeon then refers the aircrew member to the unit Dental Clinic to have a face cast made of the aircrew. (T-1)

2.5.2.7.3. AFE will produce a letter with the member's name, rank and last four digests of their social security number as-well-as outlining the point of contact (POC) information and the mask request. The Flight Surgeon must sign the letter. The letter will be on official unit letterhead and include a complete return address, Defense Switched Network (DSN) and commercial phone numbers as-well-as Flight Surgeon and AFE points of contacts. (T-1)

2.5.2.7.4. Pack the finished facial cast and letter and mail to the Custom Mask Systems Flight at the 88 AMDS/SGPT, 2290 Monahan Way, Building 103 (Area B),Wright Patterson AFB, OH 45433, DSN 785-4566/2709. (T-1)

2.5.2.8. Parachutists' Masks. Lead Command—ACC.

2.5.2.8.1. Will be maintained IAW all applicable TOs and/or commercial manuals. (T-1)

2.5.2.8.2. May be placed in serviceable storage status when not used on a frequent basis. All Parachutists' mask stored in serviceable storage status will be inspected annually. (T-1)

2.6. Aircrew Oxygen Connectors. Lead Command—ACC.

2.6.1. General Aircrew Oxygen Connector Guidance.

2.6.1.1. Aircrew members requiring parachutes with emergency oxygen cylinders must have the three-prong bayonet on the oxygen mask hose with a CRU-8/P or CRU-60/P connector. (T-1)

2.6.1.2. Oxygen mask connectors, P/N 232-94/A, 266-370, or 266-360 may be used on all oxygen masks where a bailout bottle or high altitude capability is not required. (T-1)

2.6.1.3. Inspect oxygen mask connectors at TO directed frequency or concurrent with oxygen mask used if no frequency is identified in the TO. AFE will inspect and maintain oxygen mask connectors attached to Scot Communications and Oxygen Tester (SCOT), Aircrew Systems Testers, Altitude Combined Aircrew Systems Tester (ACAST), or Pressure Breathing Oxygen Flight Ensemble Test Set (TTU) 529/E Tester. The inspections will be recorded in applicable data base or on an AFTO Form 334. (T-1)

2.6.1.4. Units will develop local procedures to track the location and serviceability of CRU-94, CRU-120, CRU-122, CRU-103 or CRU-60/P oxygen connectors. AFE is only required to track the location of connectors installed on or stored with man-side equipment. AFE is not responsible for updating CAMS/IMDS for connectors installed on aircraft. (T-1)

2.6.1.5. Bomber aircraft oxygen connectors are inspected in conjunction with the periodic/routine parachute inspection. Store and inspect oxygen connectors in conjunction with the parachute or oxygen mask for aircraft where the parachutes are stored in AFE sections and carried to aircraft by the aircrew prior to each flight. (T-1)

2.6.1.6. Bomber aircraft with pre-positioned parachutes (non-integrated), the oxygen connector is retained on the aircrew member's oxygen mask delivery tube. The connector will be inspected in conjunction with the oxygen mask. A separate inspection record is not required when the connector remains installed on the oxygen mask hose. (T-1)

2.6.1.7. To the maximum extent possible, all ejection seat aircraft will have the oxygen connector attached to the torso harness. (T-1)

2.7. Emergency Aircrew Oxygen Systems. Lead Command—AMC.

2.7.1. Emergency Escape Breathing Device (EEBD) or Protective Breathing Equipment (PBE). For the purpose of this instruction and operational application the term EEBD and PBE are interchangeable. PBE is now considered the standard industry term. (T-1)

2.7.1.1. IAW Federal Aviation Regulation Section 121.337, Protective Breathing Equipment, and technical standard orders (TSO) C99, Protective Breathing Equipment, and TSO-C116, Crewmember Protective Breathing Equipment, PBEs are primary aircrew protective equipment in the event of an onboard aircraft fire. Exception, ACC and AFSOC may continue to use the fire fighter's smoke mask as the primary aircrew protective equipment in the event of an onboard aircraft fire. (T-1)

2.7.1.2. PBEs will be placed in close proximity of each firefighting station. Some aircraft configurations may require one located at the navigators station. Refer to AFI 11-2MDS Series Volume 3, Addenda A or this instruction for specific configuration locations. (T-1)

2.7.1.3. Units will use PBEs, P/N 802300-14, with the fire retardant polyethylene (green) storage container, P/N 803753-01, and neoprene neck seal. PBE P/N 802300-14 is considered the primary device. Units may still use EEBD, P/N 802300-11, until item's

service-life expires. Units will not substitute above items with PBE, P/N 802300-01, with the polyethylene (day-glo orange) container and urethane neck seal. (T-1)

2.7.1.4. AFE personnel should limit how often the PBEs are removed from or installed into the container to reduce wear-and-tear on the vacuum-sealed bag. PBEs or EEBDs will remain in their original "hard" carrying case to provide fire and puncture-proof protection. If other PBE part numbers become authorized for use, units will receive guidance from their respective MAJCOM AFE office. (T-1)

2.7.2. Fire Fighter's and Oxygen Smoke Mask Assemblies. Lead Command—AFSOC.

2.7.2.1. PBEs are designed to replace the Fire Fighter's Smoke Mask Assemblies as the primary aircrew protective equipment in the event of an onboard aircraft fire. (T-1)

2.7.2.2. When Fire Fighter's and Oxygen Smoke Masks installed at oxygen regulator stations are removed from aircraft permanently and replaced with PBE assets, units will also install a Scott/AVOX 358 Series mask and goggle assembly at the oxygen regulator station where the smoke mask was previously installed. If placement of mask is not practical at the oxygen regulator station, the MAJCOM AFE office will consult with their Stan/Eval section to find the best location to place the mask(s). (T-1)

2.7.2.3. Units will follow guidance for specific mask quantities, type and location per AFI 11-2MDS Series Volume 3, Addenda A or this instruction when an Addenda A does not exist. (T-1)

2.7.3. Helicopter Emergency Egress Device (HEED). Lead Command—ACC. All rotary wing type aircraft aircrews will wear the HEED during overwater flights when they are outside the auto rotation distance from shore. (T-1)

2.7.4. Helicopter Emergency Air Breathing Device (HABD). Lead Command—ACC. The HABD may be used by all rotary wing airframe in lieu of HEED. Refer to TO 14-1-1 for further guidance.

2.7.5. AFGSC helicopter aircrew will wear a HEEDS, the Survival Egress Air (SEA), or Aqualung system during overwater flights when they are outside auto rotation distance from shore. These devices will not be stowed in flight suit pockets; they must be correctly stowed in the issued survival vest/harness such as the Air Warrior Primary Survival Gear Carrier (PSGC). (T-1)

2.8. Passenger Emergency Oxygen Masks and Systems.

2.8.1. Emergency Passenger Oxygen System (EPOS). Lead Command—AMC.

2.8.1.1. EPOS is the preferred passenger oxygen, smoke, and fume protection. Note: Passenger Oxygen Kits (POK) are not authorized for use on USAF aircraft. (T-1)

2.8.1.2. EPOS is not designed to be used and will not be used by aircrew performing primary aircrew duties, to include AECM. (T-1)

2.8.1.3. C-130, C/KC-135 and KC-46A units will install a carrying strap IAW TO 15X5-2-4-1 on all EPOS units if case P/N MR-10097AF (NSN 1660-01-495-3043) is not utilized. (T-1)

2.8.1.4. The EPOS container contains instructions on the activation and donning of the EPOS unit. Additional visual aids are not required to be produced or attached to the EPOS unit. (T-1)

2.8.2. Passenger Oxygen Mask Assembly (Drop Down Masks). Lead Command—AMC.

2.8.2.1. AFE will perform periodic inspections on aircraft installed drop down passenger oxygen masks at intervals determined by the aircraft maintenance schedule. These inspections may be performed either on aircraft or off aircraft. (T-1)

2.8.2.2. C-17A units will ensure all masks, to include masks on the sidewall seats, the stowed centerline seats, lavatories, aeromedical stations (aircraft installed and off-aircraft spares), and Air Transportable Galley Latrine (ATGL) are inspected and maintained IAW applicable TOs. (T-1)

2.9. Aircrew Protective Helmets and Helmet Liners. Lead Command—ACC. Exception: AFGSC is Lead Command for rotary wing helmets.

2.9.1. Protective Helmet General Guidance:

2.9.1.1. Aircrew helmets are required for the following conditions: (T-1)

2.9.1.1.1. For ejection or bailout and aircrew performing air defense system missions. (T-1)

2.9.1.1.2. All missions requiring parachutes or when parachutes are pre-positioned aboard the aircraft. Flying helmets must be used in conjunction with the parachute to avoid head injuries. Note: Not applicable when carrying passengers or when otherwise directed in the AFI 11-2MDS, Volume 3 series publications for mission requirements. (T-1)

2.9.1.1.3. For use with helmet mounted accessories (i.e., night-vision systems, nuclear flash protective devices, etc.), and as prescribed by applicable MDS flying publications or mission directives. Exception: KC-135 and KC-46A Special Operations Air Refueling (SOAR) missions do not require helmets for NVD operations. (T-1)

2.9.1.1.4. Aircrew helmets will be retained for aircrew wearing aircrew chemical defense equipment that require helmet mounted devices to perform their mission in a potential chemical, biological, radiological, nuclear (CBRN) contaminated environment. (T-1)

2.9.1.2. All aircrew helmets will be subdued factory gray or blended to match the aircraft color scheme so as not to contrast or brightly reflect off inside of the canopy or cockpit glass. Exception, AFSOC helmets will be factory gray or urban tan. (T-1)

2.9.1.3. Foreign students may use their own helmets if systems are compatible. However, continued use will depend on availability of maintenance procedures and replacement parts. (T-1)

2.9.1.4. Only helmet visor housings and visor fabric covers may be customized with unit approved designs. Visor housings may only be customized using elastomeric film (decals), tape or equivalent materials. Designs must not interfere with visor operations, the EEU-series goggle top latch assembly, or the NVD mounting bracket. Designs will be

obliterated by removing decals or replacing visor housings or covers when necessary to comply with real world sanitization requirements. (T-1)

2.9.1.5. Aircrew helmets and masks will be stored and maintained in a specific designated area AFE section. (T-1)

2.9.1.6. Ensure flying helmets and oxygen masks are carried in the helmet bag to and from the AFE facility. The helmet and mask are the only items authorized in the main compartment of the helmet bag. The headset may be carried in the helmet bag outer pocket. (T-1)

2.9.1.7. AFE will remove and discard any food items, bug sprays, batteries, petroleum based products or any other items that may cause contamination to oxygen equipment in aircrew helmet bags. (T-1)

2.9.1.8. Aircrew will hand carry helmets and oxygen masks unless packed in a hard protective case while traveling on any commercial flight. Flight helmets, oxygen masks, and D-1 bags will not be palletized unless placed in a crush proof container to prevent damage. (T-1)

2.9.1.9. AFE will establish issue and turn-in procedures for individually issued helmets.

2.9.1.10. When masks have not been used or worn within the previous 30 days, perform the disassemble portion of the inspection on the next inspection, not to exceed 90 days. Masks not disassemble for inspection within the 90 day period will be removed from service until the proper inspection can be completed. (T-1)

2.9.1.11. When O2 masks are attached to helmets, only one label indicating the date due next inspection is required. Attach label to the helmet or O2 mask hard-shell, as appropriate. Exception: Parachutists oxygen masks will NOT have due date labels affixed to them. (T-1)

2.9.1.12. AFE personnel will perform postflight inspections of all helmets and masks used for flight. MAJCOMs may direct aircrew to perform their own postflight inspection. Aircrew will perform postflight inspections on helmets, masks, and NVDs when AFE support is not available. (T-1)

2.9.1.13. Flying units will not procure or use commercially procured/direct vendor purchase helmets without approval of AFLMC/WNZC (Robins AFB GA) and MAJCOM AFE office. (T-1)

2.9.1.14. HGU-56/P. Lead Command—AFGSC. Rotary-wing and tilt-rotor aircrews will wear the HGU-56/P helmets. (T-1)

2.10. Aircrew Optical Devices and Accessories.

2.10.1. Aircrew Optical Devices and Accessories General Guidance.

2.10.1.1. Aircrew Optical devices to include JHMCS, Helmet Mounted Integrated Targeting System (HMITS), NVDs, nuclear flash blindness goggles, Aircrew Laser Eye Protection (ALEP) and high contrast visors will only be worn or used by aircrew members requiring them to perform specific missions. The use of high contrast visor requires a letter or memo (e-mail format is acceptable) of approval from the Flight Surgeon prior to issue to the aircrew. (T-1)

2.10.1.2. AFE technicians will perform operational and intermediate level maintenance on aircrew NVDs. Additionally, AFE personnel are responsible for issuing, fitting, inspection, maintenance, and storage of aircrew NVDs only. AFE personnel will not maintain ground crew NVDs and ground crew optical devices, (i.e. Security Forces, Airfield Operations, etc.). Exception: Only for Special Tactics Team, Combat Control Team (CCT), AMC C-17A Special Operations Low Level II (SOLL II) FARP teams, ABFDS teams, and Guardian Angel already supported by AFE personnel for that specific operator mission. (T-1)

2.10.1.3. Deleted

2.10.1.4. Aircrew will perform preflight inspection and operational checks IAW governing TOs on all personal flying equipment, including NVDs prior to the first flight of the day. AFE will complete post-flight requirements on all NVDs returned to the AFE shop. (T-1)

2.10.1.5. AFE will ensure an area is designated for use by aircrew members to perform NVD preflight operations. (T-1)

2.10.1.6. AFE technicians will have their vision validated by the flight surgeon or optometry clinic annually (IAW AFI 48-123) to ensure they meet visual requirements for maintaining NVDs established in TOs. Document the eye exam on AF Form 55, *Employee Safety and Health Record*, AF Form 1098, *Special Task Certification and Recurring Training*, in FERMS, etc... Technicians must have 20/20 vision (corrected or uncorrected) to perform NVD maintenance in accordance with TOs 12S10-2AVS9-2 and 12S10-2AVS10-2. (T-1)

2.10.1.7. Store high value optical devices in a secure area when not in use. Assets issued to aircrew will be done through a sign-in and sign-out log, hand receipt or electronic tracking system with digital signature capability. AFE will keep an accurate inventory of NVDs in the storage area. (T-1)

2.10.2. Aircrew Optical Devices and Accessories Specific Guidance:

2.10.2.1. Flash blindness Protection Devices. Lead Command—AFGSC.

2.10.2.1.1. Pre-position flash blindness devices on alert configured aircraft as directed by specific OPORDs or higher headquarters (HHQ) taskings. Quantities of flash blindness devices will be as specified in the appropriate KC-135 or KC-46A 11-2MDS series Addenda A or B-2/B-52 configuration tables contained in this instruction. (T-1)

2.10.2.1.2. Lead-Lanthanum-Zirconate-Titanate (PLZT) Ceramic Materials goggles are the primary protective equipment for flash blindness protection. Goggle Frames (MIL-G-635), are not authorized for use as flash blindness protection. (T-1)

2.10.2.1.3. EEU-series PLZT goggles will be inspected by AFE personnel as specified in the applicable TO. Attach a DD Form 1574, *Serviceable Tag –Materiel*, to each carrying case and document all inspections performed and inspection due dates on the reverse side of DD Form 1574. (T-1)

2.10.2.1.4. Each PLZT storage container will be modified by cutting an outline (3/4-inch deep) of a monocular eye shield into the upper right portion of the lid protective

cushioning material. As an alternate method, units may cut a slot into the protective foam block below where the PLZT light seal sits. Eye shields will be stored face down if placed in the cut out or slide into slot if using the alternate method. Ensure the eye shield elastic string is stowed in a manner to leave a slight loop. Do not wrap the elastic string around the eye shield, otherwise the string will deform the eye shield foam eye seal. Seal goggle storage containers with AFTO Form 255, *Notice Certification Void When Seal is Broken.* In the event additional monocular eye shields are required units may place them on the aircraft in a suitable container. (T-1)

2.10.2.1.5. AFE technicians will ensure serviceability of the PLZT top latch helmet mount and power cable assemblies concurrent with the helmet inspections. (T-1)

2.10.2.2. Aircrew Night Vision Devices. Lead Command—ACC.

2.10.2.2.1. Units will place an inspection due date label on the NVD monocular housings. (T-3)

2.10.2.2.2. CCT, STS and GA NVDs. STS and GA units will perform prior to use inspections IAW NVD user manual/technical order. (T-1)

2.10.2.2.3. Where applicable, squadron commanders will ensure an area is designated for use by aircrew members to perform NVD preflight operations. (T-1)

2.10.2.2.4. MAF airlift (C-5, C-17, C-27, and C-130), KC-135/KC-46 SOAR and AFSOC C-130 variants aircrew may use hand held power supply, or option of monocular to conduct airlift scanning or SOAR duties. (T-1)

2.10.3. Aircrew Laser Eye Protection (ALEP). Lead Command—ACC.

2.10.3.1. Disposition of Protective Devices. Laser eye protective devices should be secured to prevent pilferage. Units having condemned or otherwise unserviceable spectacles will maintain positive control storing assets until they are physically destroyed or returned to Standard Base Supply System (SBSS). The preferred method of disposal for all ALEP is to incinerate the lenses. If incinerating the lenses is not available or practical, AFE personnel should crush the lenses completely and then discard. (T-1)

2.10.3.2. Glendale FV-9 Santa Cruz Spectacle.

2.10.3.2.1. The Glendale FV-9 Santa Cruz spectacle consists of a monolithic polycarbonate lens formed through an injection molding process and incorporates an absorptive dye that is designed to absorb laser emissions in near infrared energy spectral region. The FV-9 will protect the wearer from Laser energy emitted from Air Commander's Pointer. For more specific information on wavelength specifications contact ACC/A3TOA Command Aircrew Flight Equipment section. (T-1)

2.10.3.2.2. The FV-9 transmits 50% of visible light and will protect wearer from Laser energy emitted from militarily significant infrared designators and pointers operating in infrared spectral region. The FV-9 is compatible with NVDs and Heads-Up-Displays. The FV-9 spectacles provide side protection in a wraparound frame design and are authorized for use with handheld lasers. (T-1)

2.10.3.2.3. FV-9 ALEP devices are designed to protect against specific laser energy wavelength in the non-visible region. Incorrect usage or subjecting spectacles to

conditions outside certified specifications may result in a degradation of performance and potential risk of exposing the user to a laser hazard/threat. Never use ALEP to intentionally view a laser.

2.10.3.2.4. Fitting. FV-9 spectacles are designed with adjustable temple pieces to allow spectacles to fit close to the face. Expand or contract temple pieces to obtain a close comfortable fit. (T-1)

2.10.3.2.5. Pre-Use Inspection and Maintenance. Inspect FV-9 ALEP spectacles for visible lens scratches or frame damage. Always store the spectacles in the provided protective case when not in use. (T-1)

2.10.3.2.6. Periodic Inspection and Maintenance. The following inspection requirements are provided to extend serviceability of FV-9 spectacles and will be accomplished by AFE personnel every 180 days. Document inspection in applicable tracking system. (T-1)

2.10.3.2.7. Visually inspect lenses for scratches and remove from service spectacles displaying scratches in the primary focal region. Surface scratches remove absorptive dyes and reduce optical density. Replacement assets are available through base supply under Federal Stock Number 4240-01-458-5567. (T-1)

2.10.3.2.8. Visually inspect to ensure lenses are secure in the frame. Any sign of frame damage is reason to remove spectacles from service. (T-1)

2.10.3.2.9. Clean lenses using cloth and plastic lens cleaner supplied with the spectacles.

2.10.3.3. Block Zero (Block 0). (T-1)

2.10.3.3.1. Item Description. Block 0 spectacles are designed to fit in the Air Force Frame and were procured as a COTS item. The spectacle is composed of a thin film containing the laser protective properties bonded between two polycarbonate elements laminated together to form a lens. The lenses are then glazed into the Air Force Frame and temple arm is etched with a serial number. Each spectacle lens is custom fitted to the frame and is not interchangeable. (T-1)

2.10.3.3.2. Capability. Block 0 spectacles provide laser protection by reflecting a percentage of incident radiation. The spectacle can minimize temporary effects of dazzle or glare and prevent permanent eye damage from low power lasers in selected visible and invisible spectral regions. Block 0 spectacles are optimized for night operations and may be prone to exhibit signs of reflection or glare when worn during daylight hours. Attachable side shield protection is available for use with Block 0 spectacles from Glendale Technologies. Specific wavelength characteristics of this device are available upon request from HQ ACC/A3TOA, Langley AFB VA. (T-1)

2.10.3.3.3. Warnings and Limitations. ALEP devices are designed to protect against specific laser energy wavelengths. Therefore, incorrect usage or subjecting the spectacles to conditions outside certified specifications may result in a degradation of performance and potential risk of exposing the user to a laser hazard/threat. Block 0 is certified safe for flight during day and night operations. Subsequently, any pair of

spectacles viewed as excessively reflective should be annotated and removed from service. (T-1)

2.10.3.3.4. Fitting. Spectacles should be properly fitted prior to use in a laser hazard/threat area. They should fit as close to the face as possible maximizing the area of protection. There should be minimal gaps between the frame and side of the nose. Temple's arms should press lightly against side of the head, and earpieces should curve downward following the back of ear to prevent spectacle from sliding out of position. (T-1)

2.10.3.3.5. Pre-Use Inspection and Maintenance. (T-1)

2.10.3.3.5.1. Check spectacle frame for signs of damage. (T-1)

2.10.3.3.5.2. Check to ensure lenses are secure in the frame. (T-1)

2.10.3.3.5.3. Store spectacles in micro fiber cloth bag and hard carrying case when not in use. Basic information on use, storage and cleaning is included in the hard carrying case. (T-1)

2.10.3.3.5.4. Remove dust on optical lens surface with the cleaning bag provided. Ensure cleaning bag is clean prior to use. The cloth bag can be cleaned as necessary by hand or machine-washed in water temperatures up to 140°F. (T-1)

2.10.3.3.5.5. Remove dirt or grit from lens surface using a water moistened lens tissue taking care not to trap abrasive matter between the tissue and polycarbonate surfaces. Soap or a mild detergent similar to Ivory Liquid should be used to remove greasy stains or smears. Do not use petroleum spirit or other solvents to clean spectacles. Dry the optical surfaces using a clean dry lens tissue. (T-1)

2.10.3.3.6. Periodic Inspection and Maintenance.

2.10.3.3.6.1. AFE personnel will inspect Block 0 spectacles for serviceability upon receipt and every 180 days thereafter. Document inspection in FERMS or other approved tracking system. (T-1)

2.10.3.3.6.2. Inspect lenses for signs of delamination. Delamination can be verified by carefully looking through the spectacle lenses from a distance of approximately 12 inches. Delamination will look like growth rings on a tree cross-section, a series of partial rings or slight color differences from rest of the lens. Delamination usually starts in the corners of the lens. Except in extreme cases, delamination does not diminish laser protection properties. Do not use if either lens shows signs of delamination between front and rear polycarbonate that affects aircrew vision or exceeds 4mm in any direction. (T-1)

2.10.3.3.6.3. Visually inspect and ensure individual lenses are secure in frame. If the frame is damaged, lenses cannot be recovered for further use because lenses are custom matched to each frame. (T-1)

2.10.3.3.6.4. Remove from service spectacles displaying scratches in primary focal region. Lenses are coated with an anti-reflective coating that does not impact performance of the laser protective properties when scratched. However, scratches may be distracting when appearing in the primary focal region and

should be removed from service. (T-1)

2.10.3.4. Block Zero Plus (Block 0+) Spectacle (Model B) and Clip-on (Model D).

2.10.3.4.1. Block 0+ laser protective devices were procured as COTS items in FY02 and were available in two configurations; an Air Force Frame spectacle and a clip-on device. The spectacle and clip-on have two lenses constructed of a polycarbonate optical element. There is a polycarbonate element on the outer surface and a polycarbonate optical element on the inner surface. A thin film containing laser protective properties is bonded between polycarbonate elements and laminated together to form the lenses. Lenses are glazed into frame and etched with a serial number. Each spectacle lens is custom fitted to the frame and is not interchangeable. (T-1)

2.10.3.4.2. Block 0+ ALEP devices provide laser protection by reflecting and absorbing a percentage of incident radiation. This device can minimize temporary effects of dazzle or glare and prevent permanent eye damage from lasers in selected visible and invisible spectral regions. Housed in Air Force Frame (AFF), Block 0+ ALEP extends capability of Block 0 by adding additional bands of protection. Also, Block 0+ ALEP is provided as a clip-on for aircrew members who wear prescription spectacles. Clip-on spectacles are attachable to standard medium size 55mm AFF. For additional information on protective characteristics of this device, contact HQ ACC/A3TOA, Langley AFB VA. (T-1)

2.10.3.4.3. Block 0+ ALEP added protection beyond Block 0 and are certified safe for flight. Wearing Block 0+ may result in a slight change in appearance of some colors. However, any pair of spectacles observed to promote excessive reflection or color shifts should be annotated and removed from service. Spectacles should not be exposed to temperatures below - 4°F or above 131°F. (T-1)

2.10.3.4.4. Block 0+ spectacles must be fitted using the following procedures:

2.10.3.4.4.1. Fit spectacles as close to face as possible with minimal gaps between the frame and side of the nose. The nose pads can be adjusted with needle nose pliers to minimize gaps, reduce entrance of stray radiation and improve comfort. The temple arms should press lightly against side of the head and earpieces should curve downward following back of the ear to prevent spectacles from sliding out of position. (T-1)

2.10.3.4.4.2. Block 0+ Clip-On (Model D) is designed to attach to outer surface of the new AFF aircrew spectacle 55 mm frame. Clip-on attachment hooks should tightly "grasp" spectacle frame. Do not attempt to attach the clip-on to older style aircrew frame. Doing so will damage clip-on and create a foreign object damage (FOD) hazard. (T-1)

2.10.3.4.5. Users requiring prescription capability have two options available. (T-1)

2.10.3.4.5.1. Option 1: A combination of contact lens and the Model B spectacle. (T-1)

2.10.3.4.5.2. Option 2: A combination of aircrew prescription spectacles and Model D clip-on. While this option provides the required capability, it adds

additional weight to spectacle, creates additional reflections and some loss of visual acuity. (T-1)

2.10.3.4.6. Block 0+ Pre-Use Inspection and Maintenance. (T-1)

2.10.3.4.6.1. Check spectacle frame for signs of damage. (T-1)

2.10.3.4.6.2. Check to ensure lenses are secure in the frame. (T-1)

2.10.3.4.6.3. Store spectacles in micro fiber cloth bag and hard carrying case when not in use. Basic information on use, storage and cleaning is included in hard carrying case. (T-1)

2.10.3.4.6.4. Remove dust on the optical lens surface with cleaning bag provided. Ensure cleaning bag is clean prior to use. The cloth bag can be cleaned as necessary by hand or machine-washed in water temperatures up to 140°F. (T-1)

2.10.3.4.6.5. Remove dirt or grit from lens surface using a water moistened lens tissue taking care not to trap abrasive matter between the tissue and polycarbonate surfaces. Soap or a mild detergent similar to Ivory Liquid should be used to remove greasy stains or smears. Do not use petroleum spirit or other solvents to clean spectacles. Dry the optical surfaces using a clean dry lens tissue. (T-1)

2.10.3.4.7. Block 0+ Periodic Inspection and Maintenance.

2.10.3.4.7.1. AFE personnel will inspect Block 0+ spectacle/Clip-on for serviceability upon receipt and every 180 days thereafter. Document inspection in applicable tracking system. (T-1)

2.10.3.4.7.2. Inspect lenses for signs of delamination. Delamination can be verified by carefully looking through spectacle lenses from a distance of approximately 12 inches. Delamination will look like growth rings on a tree cross-section, a series of partial rings or slight color differences from rest of the lens. Delamination usually starts in the corners of the lens. Except in extreme cases, delamination does not diminish laser protection properties. Do not use if either lens shows signs of delamination between front and rear polycarbonate that affects aircrew vision or exceeds 4 mm in any direction. (T-1)

2.10.3.4.7.3. Visually inspect and ensure individual lenses are secure in the frame. If the frame is damaged, lenses cannot be recovered for further use because lenses are custom matched to each frame. (T-1)

2.10.3.4.7.4. Lenses are coated with an anti-reflective coating that does not impact performance of laser protective properties when scratched. However, scratches may be distracting when appearing in the primary focal region and may require removed from service. (T-1)

2.10.3.5. Block One (1) Spectacle. Refer to T.O. 14P3-9-51

2.10.3.6. JHMCS Compatible ALEP Spectacles (JCAS).

2.10.3.6.1. The JCAS design is a rapid response effort to provide laser protection for JHMCS users. The required laser protection is contained within a laminated polycarbonate lens structure. The JCAS lenses are housed in the Low Pro Wrap frame

providing a one-size-fits-all configuration. Each spectacle is marked with a serial number and identification code on the frame. JCAS is visually compatible with JHMCS (Joint Helmeted Mounted Cueing System) display and designed to work with the 40% JHMCS visor. Required design eliminated prescription capability and reduced field of regard coverage (compared to Block 1) to accommodate fit in limited space behind the JHMCS visor. (T-1)

2.10.3.6.2. JCAS spectacles implement technologies that reflect or absorb specific laser wavelengths. JCAS will minimize temporary effects (e.g., dazzle or glare) and permanent eye damage from lasers of selected wavelengths in UV, visible, and NIR. JCAS does not provide vision correction for prescription wearers and is not designed for night use. JCAS spectacles are optimized for day use with 40% JHMCS visor and are fit compatible with JHMCS helmet/visor/mask system. (T-1)

2.10.3.6.3. Wearing JCAS may cause some difficulty in determining actual color of lighting and may cause some color shifts. Aircrew should receive specific training unique to JCAS to ensure they can identify lighting patterns and color shifts while wearing the device. JCAS spectacles are day-only devices optimized for performance and protection with 40% JHMCS visor. JCAS is not intended for night use. Always store JCAS in the protective case to prevent unnecessary solarization of the lenses. (T-1)

2.10.3.6.4. Fitting JCAS. JCAS is provided in one size to fit all users. AFE Technicians fit JCAS to pilots by adjusting temple arms and nose pads to accommodate oxygen mask and JHMCS visor while providing optimal lens coverage over each eye. Spectacles must be properly fitted prior to use in a laser hazard/threat area. Specific fitting instructions are contained in the JCAS Technical Manual. (T-1)

2.10.3.6.5. JCAS Pre-Use Inspection and Maintenance. Inspect JCAS spectacles for visible lens scratches or frame damage. Use only the cleaning cloth/bag provided or high quality lens tissue for wiping the lens. Always store spectacles in protective case when not in use. Consult JCAS Technical Manual for specific pre-use inspection and maintenance procedures.

2.10.3.6.6. JCAS Periodic Inspection and Maintenance. (T-1)

2.10.3.6.6.1. AFE personnel will inspect JCAS spectacles for serviceability upon receipt and every 180 days thereafter. Document spectacle inspections in the applicable tracking system. The JCAS frame and lenses will be inspected for damage or defects.(T-1)

2.10.3.6.6.2. Inspect lenses for signs of delamination. Delamination can be verified by carefully looking through spectacle lenses from a distance of approximately 12 inches. Delamination will look like growth rings on a tree cross-section, a series of partial rings or slight color differences from rest of the lens. Delamination usually starts in the corners of the lens. Except in extreme cases, delamination does not diminish laser protection properties. Do not use if either lens shows signs of delamination between front and rear polycarbonate that affects aircrew vision or exceeds 4 mm in any direction. (T-1)

2.10.3.6.6.3. AFE will consult the JCAS technical manual for additional

inspection criteria. (T-1)

2.10.3.7. ALEP Block 2 Spectacles. Refer to T.O. 14P3-9-71-WA-1.

2.11. Aircrew Chemical, Biological, Radiological, Nuclear (ACBRN) Equipment. Lead Command—ACC.

2.11.1. Unit AFE personnel will maintain individual aircrew sizing information in applicable tracking system, be responsible for requisitioning, fitting, and maintaining ACBRN equipment D-Bags AERP/Joint Service Aircrew Mask [JSAM] and associated D-Bag items), and be readily available for donning and doffing operations. (T-1)

2.11.2. Ensure the full basis of issue (BOI) for ACBRN operations (refer to **Table 2.3**) is available to each aircrew member deployable to a CBRN threat area. Units will use the following guidance when maintaining D-Bags. (T-1)

2.11.2.1. Option #1: Build D-Bags as a complete D-Bag (complete BOI installed). (T-1)

2.11.2.2. Option #2: Create a separate "Mini" D-1 bag with one complete CBRN ensemble (remaining D-bag sustainment/BOI items will be in a second bag/storage container). (T-1)

2.11.2.3. Option #3: Maintain "Mini" D-1 bags with remaining D-Bag BOI items as "bulk stored". Units will ensure bulk stored items can meet full D-Bag requirements for their unit and is fully deployable. (T-1)

2.11.2.4. AECMs have unique ACBRN requirements. Until JSAM is fielded, AECM will use the M50 ground crew mask and filters issued as part of the C-Bag. AECM D-Bag BOI deviation guidance is outlined in **Table 2.3**. (T-1)

2.11.2.5. E-3, E-8, RC/TC/VC/WC-135 aircrew have unique ACBRN requirements. Until JSAM is fielded, these aircrew will use the MBU-13/P mask, with modified manifold and pigtail adaptor or AERPS as applicable. E-3, E-8, RC/TC/VC/WC-135 aircrew D-Bag BOI deviation guidance is outlined in **Table 2.3**. (T-1)

2.11.2.6. UH-1 (AFGSC and AFDW) have unique ACBRN requirements. Until JSAM is fielded, UH-1 aircrew will use the M45 ground crew mask and filters. UH-1 BOI deviation guidance is outlined in **Table 2.3**. (T-1)

2.11.2.7. Units will produce locally developed checklists and place them in the D-1 bag for ACBRN equipment donning that best suits mission needs and equipment configuration.

2.11.3. As a minimum, aircrews will be sized, fitted and issued a "Mini" D-1 bag. (T-1)

2.11.3.1. Aircrews deploying into CBRN threat areas will hand carry one complete ACBRN equipment "Mini" D-1 bag unless otherwise directed by MAJCOM guidance. (T-1)

2.11.3.2. Units must also comply with theater specific reporting instructions for ACBRN requirements when the "Mini" D-1 bag is insufficient to meet their requirements. Follow theater, MAJCOM, and unit specific guidance for employed area operations and redeployment. (T-1)

2.11.3.3. Units should report all shortfalls through their home station or deployed leadership to minimize impact on ACBRN capability.

2.11.4. Procedures will be established for mass filter element and battery installation. (T-1)

2.11.4.1. Close coordination should be maintained between AFE and the flying unit in order to ensure D-Bags are prepared for issue or deployments. (T-1)

2.11.4.2. Units are not required to open and install BA-5588/U Batteries in the CQU-7/P Blower, C2A1 Filters on the CQU-7/P blower/AERP manifold, Emergency and Inline O2 Filters, and 9 volt Alkaline Batteries in the MXU-835/P Intercommunication Unit when preparing D and D-1 bags for deployment. All of these items may be bulk stored/shipped and installed when directed. (T-1)

2.11.4.2.1. The Combatant Command may issue direction when to install these items once in the deployed theater depending on the current CBRN threat level. AFE may use filter and battery "shop test sets" (instead of opening new filters and batteries) to accomplish routine/periodic inspections as well as prepare equipment for aircrew pre-flight procedures. Units will follow specific MAJCOM guidance for local and higher headquarters exercises and evaluations. (T-1)

2.11.4.2.2. When crew members return from contingencies and AERP equipment was not used, remove the batteries, and keep them in their original sets. Additionally, to prevent fire or explosion store batteries in plastic bags. If batteries were used, remove from blower assembly and mark for training use prior to placing them in a plastic bag. (T-1)

2.11.5. Joint Protective Aircrew Ensemble (JPACE) and CWU-66/P coverall.

2.11.5.1. JPACE and the CWU-66/P are the primary aircrew below-the-shoulder chemical protective garment for all aircrew. JPACE will replace the CWU-66/P on an attrition basis. (T-1)

2.11.5.2. Aircrews are responsible for tracking service-life/laundering of the JPACE or CWU-66/P. When JPACE or CWU-66/P is removed from package, annotate the date removed with permanent ink on the laundry instruction label. (T-1)

2.11.6. Cotton undergarments.

2.11.6.1. Cotton undergarments are optional with the JPACE and CWU-66/P. This option must be determined by individual aircrew, not AFE personnel. (T-1)

2.11.6.2. Units will maintain sufficient quantities of cotton undergarments in order to provide individual aircrew the option to have these items placed in their bags. If the aircrew opts to have cotton underwear in their bags, the BOI for the D/D-1 bag will be based on the quantities **Table 2.3** and the items will be installed in the D/D-1 Bag. If an individual aircrew member does not desire to have cotton underwear in his or her bags, AFE is not required to install cotton underwear or masking tape in their D/D-1 bag. (T-1)

2.11.6.3. Since cotton underwear is an expendable item, the AFE shop supervision will determine appropriate stock levels to support this aircrew option. (T-1)

2.11.7. Filter, oxygen emergency assembly. This filter is only required when the MBU-19/P is used with a parachute/ejection seat. Per TO 14P3-1-151, non-ejection type aircraft not

utilizing a bail-out bottle are not required to replace the O2 oxygen filter as long as the emergency O2 connector seal has not been broken. (T-1)

2.11.8. O-ring, emergency O2. This item is only required when the filter, oxygen emergency assembly is included in the D-Bag. (T-1)

2.11.9. M295 Kits. One M295 kit consists of 4 each M295 mitts.

2.11.9.1. Bulk store M295 decontamination kits in their original unopened containers. Packages will only be opened and distributed when directed to do so by command authority (i.e. installation commander, MAJCOM directives, SPINS, etc.). (T-1)

2.11.9.2. Units will determine their total M295 kit quantities based on aircrew bags maintained multiplied by the BOI for each bag. (T-1)

2.11.9.3. Use of serviceable M295 for training purposes is authorized. Use of expired M295 kits for training is not authorized as the condition and safety of the kits can no longer be verified.

2.11.10. B-52 CONECT and C-17A intercom unit adaptor. The following battery guidance is applicable to C-17A intercom unit adaptor batteries. (T-1)

2.11.10.1. Install battery or batteries in the unit only. Spare batteries are not required to be added in the D/D-1 bag. (T-1)

2.11.10.2. Use the expiration date stamped on the battery to determine date of expiration as long as it passes voltage inspection. (T-1)

2.11.10.3. Battery test using ZTS multi battery tester. The ZTS test sets sample the amount of voltage remaining in a battery. A row of red, yellow, and green light-emitting diodes (LED) arranged in pairs of two illuminate as it samples the voltage. The final color, indicates the voltage is within limits if the green led illuminate, which indicates a voltage of 80% or greater.

2.11.10.4. 1.5 volt AA battery or 9 volt test using multi-meter or ALSET. (T-1)

2.11.10.4.1. To use a multimeter to check battery voltage, place the red probe on the positive (+) terminal and the black probe on the negative (-) terminal, observe voltage reading.

2.11.10.4.2. AA batteries with a reading of less than 1.0 volt and 9 volt batteries with a reading of less than 7.2 volts will be replaced. (T-1)

2.11.11. Procedures For Using ACBRN Equipment For Training.

2.11.11.1. Crew members should use their individually issued or fitted "above-the-shoulder" AERP/JSAM equipment for wing exercises and flying-type training IAW MAJCOM IG rules of engagement or instructions. Do not use operational ensembles for AFE continuation training which could result in damage to war readiness assets. (T-1)

2.11.11.2. Units will maintain ACBRN equipment for training purposes. Units will maintain tariff sized training bags to support crew members during recurring training and local exercises. If tariff sized training bags are maintained, units will ensure a sufficient amount of bags are on-hand. Inspect and mark training equipment. (T-1)

2.11.11.3. The standard CWU-27/P flight suit adequately replicates the JPACE or CWU-66/P suits for training purposes. However, units may use expired real world suits for training when expired suits and storage space are available. (T-1)

2.11.11.4. In addition to the "above-the-shoulder" equipment, one training ensemble for AERP equipment will consist of: 1 each C2A1 filter canister; 1 each pair/set of lithium batteries; 2 each plastic overcapes; 1 pair of butyl gloves w/inserts; 2 pairs of overboots; and 3 suspension straps. (T-1)

2.11.11.5. Quantities of ACBRN equipment accountable item quantities used for training are addressed in Allowance Standards 450A (Combat Air Force (CAF)) and 450E (MAF). (T-1)

2.11.11.5.1. The allowances are maximum quantities allowed and units should use good supply discipline principles to determine their actual training requirements. Units are not required to have the maximum training quantity. Active duty and AFRC units should adjust training quantities based on local needs. ANG units will adjust training quantities as directed by ANG NGB/A3OS. ANG NGB/A3OS current policy limits units to eight (8) training assets per unit. All training equipment must be clearly marked "for training use only." (T-1)

2.11.11.5.2. Units may retain training assets of non-accountable items that exceed the quantities of accountable item. However, it is not necessary for each aircrew to have his or her own training bag. (T-1)

2.11.11.6. Aircrew will turn-in ACBRN training equipment to AFE immediately after use. (T-1)

2.12. Emergency Electronic Communication and Signaling Equipment.

2.12.1. Combat Survivor Evader Locator (CSEL). Lead Command—ACC. The USAF is lead service for the CSEL architecture. Units may use the PRC-112 series radio until they receive their CSEL equipment complement. Exception: AETC units are authorized use of PRC-90 series radios until receipt of CSEL or equivalent radio. (T-1)

2.12.1.1. The AN/PRQ-7 series hand held radio (HHR) is the DoD system of record for isolated personnel recovery.

2.12.1.1.1. These devices provide over-the-horizon and line-of-sight communication as-well-as 406 MHz personnel locator beacon and GPS capabilities.

2.12.1.1.2. The AN/PRQ-7 series HHR incorporates National Security Agency approved Communications Security (COMSEC) techniques to protect CSEL against extraction of crypto keys.

2.12.1.1.3. The AN/PRQ-7A HHR Incorporates Terminal Area Communications (TAC) and Terminal Area Guidance (TAG).

2.12.1.2. All AFE units must (AETC and AFMC excluded): (T-1)

2.12.1.2.1. Establish COMSEC and crypto accounts to requisition materials required for programming of the CSEL HHR. Provide status of new accounts to their respective MAJCOM staff. Units without the requirement to load classified data to CSEL HHRs do not need to establish a COMSEC or crypto account. Note: Use of

another flight's or section's crypto account is authorized, provided AFE has unrestricted access to required material. (T-1)

2.12.1.2.2. Establish Automated Computer Program Identification Number (ACPIN) and Electronic Software Distribution System (ESDS) accounts to access software applicable to CSEL system management. (T-1)

2.12.1.2.3. Requisition safes certified for securing classified material and cryptographic materials for home station use and each AFE supported UTC. (T-1)

2.12.1.2.4. Coordinate with the wing encryption custodian to acquire a minimum of one Simple Key Loader (SKL) per UTC supported and sufficient numbers for home station use. (T-1)

2.12.1.2.5. Establish a requirement with the wing encryption custodian for the following COMSEC GPS crypto keys: Black Key Algorithm Update (BKAUPD) and Black Crypto-Variable Monthly (BCVM). Follow technical order instructions for loading. (T-1)

2.12.1.2.6. Validate requirements for crypto materials to include Traffic Encryption Key (TEK) and authenticator disk. (T-1)

2.12.1.3. Units must register each HHR identification number in the Joint SARSAT Electronics Tracking System (JSETS) database for tracking. Log on to web site: **https://prmsglobal.prms.af.mil/PRMS215/Login/start.aspx**. AFE unit designations have already been established in JSETS. (T-1)

2.12.1.3.1. AFE superintendents, flight chiefs, and/or NCOICs must create a login to JSETS. Do not create a new organization; this prevents accurate tracking by MAJCOMs. (T-1)

2.12.1.3.1.1. When selecting criteria, select Air Force, then select unit operations support squadron from drop down list and follow on-screen prompts. Upon approval, the requester will receive an email from JSETS administrator. Input all CSEL HHR identification numbers and serial numbers, change status of each CSEL HHR from in-transit to in-use. (T-1)

2.12.1.3.1.2. Units must add CSEL identification (ID) under the appropriate operations support squadron for NORTHCOM/CONUS operations. (T-1)

2.12.1.3.1.3. Upon integration of CSEL into flying ops, units may remove the PRC-90 series radios from service, with approval from their respective MAJCOM. (T-1)

2.12.1.3.2. Units deploying or operating in a combatant Area of Responsibility (AOR) must follow AOR Special Instructions (SPINS) for CSEL programming, reporting instructions and adding each CSEL radio to the routing tables. CONUS/OCONUS use will require the following information in JSETS. (T-1)

2.12.1.3.2.1. The primary emergency contact phone number for each CSEL radio is the home station command post with the secondary as the MAJCOM command center. If a 24-hour command post is not available, an alternate 24-hour base agency may be used. (T-1)

2.12.1.3.2.2. **(Large Frame Aircraft (LFA)** Only) All available UHF SATCOM channels will be loaded; however, the primary channel will be IAW AOR SPINS. Users will be instructed on procedures to change between UHF SATCOM channels. (T-1)

2.12.1.4. AFE and SERE personnel will instruct CSEL during the most appropriate course (i.e. academic intelligence training, LL or SS events). The instructor will brief and demonstrate procedures to change UHF SATCOM channels. (T-1)

2.12.1.5. Upon receipt of final deliveries of the AN/PRQ-7(S) CSEL Hand Held Radio (HHR) and subsequent support hardware all LFA AFE units will: (T-1)

2.12.1.5.1. **(LFA Only)** AN/PRQ-7 HHR(S) installed in aircraft prepositioned survival vests or kits will be configured as stage two zeroized radios IAW zeroization procedures outlined in T.O. 31R2-2PRQ7-1. (T-1)

2.12.1.5.2. **(LFA Only)** AN/PRQ-7 HHR's loaded in this configuration will be considered unclassified and only need to be protected as a high dollar asset. (T-1)

2.12.1.5.3. **(LFA Only)** A rechargeable battery (National Stock Number [NSN] 6140-01-534-3856) will be installed on the CSEL HHR. (T-1)

2.12.1.5.4. **(LFA Only)** Install the CSEL HHR in the survival vest in a standardized location (outside left bottom center pocket as worn). Attach CSEL HHR using the plastic D-ring connected to the HHR carrying loop. Attach TO 31R2-2PRQ7-21 (printed on brown/tan Tyvek material) to the radio pocket IAW TO 14S1-3-51 paragraph 2-5.1. (T-1)

2.12.1.5.5. **(LFA Only)** Install a spare HHR battery in the survival vest in a standardized location. Battery type (rechargeable/non-rechargeable) will be at the discretion of each unit. Spare batteries do not need to be placed in polyethylene interlocking bags, but must have battery cover installed. If units use rechargeable spare batteries they must be placed into service with a full charge. (T-1)

2.12.1.5.6. **(LFA Only)** When the HHR is installed in survival vests, inspect survival vests at intervals per TO 14S-1-131. Additionally, units must perform a battery replacement with a completely charged battery every 30 days. This battery replacement will be documented on the back of the survival vest DD Form 1574 and applicable documentation tracking system. (T-1)

2.12.1.6. AFE and SERE continuation training programs must ensure aircrew members are proficient in the use of advanced hand held radios (HHR) (e.g. AN/PRQ-7, AN/PRC-112, etc…). Aircrews must be instructed on the limitations of using a radio configured in the stage two zeroized mode, as required. Ensure training includes discussion on use of the SARSAT beacon feature as the first attempt for rescue in non-hostile environments. Users must also be instructed on procedures to change between UHF SATCOM channels. (T-1)

2.12.1.7. Units deploying or tasked to fly into AORs will issue aircrews CSEL HHRs (minimum of two HHRs per crew for LFA units) from home station--crews will not receive assets at enroute/stage locations. Issued HHRs will be configured IAW applicable SPINS. Issued HHRs will contain SARDOT information and are classified,

and will be handled and stored along with other classified aircrew equipment/material as applicable. CSEL HHRs will be issued using AF Form 1297, *Temporary Issue Receipt*, or equivalent. AFE personnel will ensure aircrew being issued CSEL HHRs are aware of the classification level of these items. At no time will classified CSEL HHRs be installed in pre-positioned survival vests. (T-1)

2.12.1.7.1. At the discretion of operations group commanders, AFE sections may continue to issue more than one radio to an aircrew member on behalf of his/her crew. These radios will be issued in an appropriate container. (T-1)

2.12.1.7.2. At stage locations with AFE support, radios loaded with classified and time sensitive SPINS information will be stored and updated with current information by AFE personnel. (T-1)

2.12.1.7.3. Aircrews transiting non-stage locations enroute to the AOR will store classified radios with their other classified information as applicable. (T-1)

2.12.1.8. Units will contact their respective MAJCOMs for disposition instructions for PRC-90 series assets. (T-1)

2.12.1.9. AFE will load advanced HHRs in compliance with combatant command SPINS. When loading radios for non-classified follow the general parameter standards located in the theater SPINS. (T-1)

2.12.1.9.1. Units will not use the password option when programming the CSEL HHR. (T-1)

2.12.2. Personnel Locator Beacons. Lead Command—ACC.

2.12.2.1. AFE personnel will locate inadvertent beacon activations where Egress personnel are not assigned or tasked to do so. Egress responsibilities are further defined in AFI 21-101, *Aircraft and Equipment Maintenance Management.* (T-1)

2.12.2.2. Personnel locator beacons will be placed in the appropriate mode based on established theater requirements or as directed by MAJCOM, theater instructions, or battle staff. (T-1)

2.12.2.3. Survival kit installed URT-44 Beacon must have the almanac updated within 24-hours of arriving at the AOR location. CAF fighter aircraft will have the almanac updated using a laptop and the USB port on rocker switch assembly. (T-1)

2.12.2.4. When beacons are installed in aircraft-installed survival kits and/or parachutes, AFE will coordinate with Egress, to include a notification process concerning any on-aircraft equipment swaps affecting JSETS/PRMS data changes. (T-1)

2.12.2.5. The URT-44 beacon is mandatory for all back style parachutes. Exception: Not applicable to parachutes used on the Escape System Upgrade Program (ESUP) ejections system, AFSOC, or units performing AFSOC missions. (T-1)

2.12.2.6. If the URT-44 beacon is not available/installed, aircrews will fly with a survival vest with a CSEL radio installed for all missions. Exception: Not applicable to parachutes used on the ESUP ejections system, AFSOC, or units performing AFSOC missions. (T-1)

2.13. Life Preserver Units (LPU).

2.13.1. LPU General Guidance.

2.13.1.1. LPUs will be worn by aircrew members and passengers of ejection seat and single engine aircraft on all flights overwater to include cross-country flights as prescribed in MDS specific operations AFIs. Designated life preservers will be readily available during all overwater flights on multi-place aircraft. Exception: LPUs are not required for overwater flights to and from PDM/Depot when route is within power off glide distance to land. (T-1)

2.13.1.2. LFA life preservers packed in A-3 bags will have a seal on the bag and a completed DD Form 1574 attached. (T-1)

2.13.1.3. LFA flying overwater to PDM/Depot, outside of the power off glide range of land, will load required flotation equipment for that MDS. (T-1)

2.13.2. Adult/Child (A/C), A-A-50652 LPU. Lead Command—AMC.

2.13.2.1. The A/C LPU is the preferred LPU for passengers. As a minimum, each aircraft will have one LPU for each passenger. Pre-position additional LPUs to meet increased scheduled PAX loads as dictated in each applicable 11-MDS Series Vol 3, Addenda A, or this instruction. With the exception of AFSOC, units will not use LPU-10/Ps for passengers. The A/C LPU does not require pre-fitting prior to use. (T-1)

2.13.2.2. A/C LPUs are not compatible for use with parachutes and survival vests and must not be used as a substitute for the LPU-10/P. Exception: AECMs can wear the A/C LPU. (T-1)

2.13.2.3. Due to the small size of the stowage compartments, AMC and supporting units are authorized to remove the sea dye marker attached to the adult/child LPUs prepositioned under the four passenger seats aboard C-21 aircraft. This configuration will prevent damage to the LPUs and accessories when stowing under the seats. Also, this configuration will facilitate the expedient removal of the LPUs from the stowage compartment during an emergency. (T-1)

2.13.2.3.1. Units will establish local procedures to identify the four LPUs with the removed dye marker (e.g. unique local control numbers). This procedure will differentiate these LPUs from the remaining six LPUs when prepositioned aboard the aircraft. (T-2) Note: vacuum packing of adult/child LPUs is not authorized. (T-1)

2.13.2.3.2. If space is available, place the removed sea dye marker in the minimum survival kit prepositioned aboard the aircraft. (T-2)

2.13.3. LPU-6/P. Lead Command—AMC. The LPU-6/P infant cot is required for infants 18 months of age and younger. (T-1)

2.13.4. LPU-10/P. Lead Command—AMC. The LPU-10/P is required to integrate with AFE and is designed for use by aircrew personnel. Exception: AECMs can wear the A/C LPU. (T-1)

2.13.5. LPU-38/P. Lead Command—ACC.

2.13.6. LPU-40/P. Lead Command—AFGSC. UH-1N units (AFMC excluded) will maintain the capability to respond to NORTHCOM contingency operations by maintaining 12 each LPU-40/Ps and 12 each Sea Egress Air (SEA) bottles. Inspect IAW TM 1-1680-377-13P-4. (T-1)

2.14. Life Rafts and Escape Slides.

2.14.1. Life Raft and Escape Slide General Guidance.

2.14.1.1. Position sufficient types of life rafts aboard each aircraft on overwater flights to accommodate all aircrew and passengers IAW TO 14S3-1-3, Type and Number of Individual Survival Kit Containers and Life Rafts To Be Used In Various Type Aircraft, and applicable MDS configuration tables. (T-1)

2.14.1.2. Place additional life rafts aboard aircraft when required. Ensure a DD Form 1574 is attached to each aircraft life raft and aircraft actuation handles for life rafts installed in wing well, silos, etc. Ensure the time-change information is annotated on the reverse side of tag IAW TO 14S-1-102-21. (T-1)

2.14.2. Air Cruiser-9 (AC-9). Lead Command—AMC. All users will ensure system is used IAW safe-to-fly recommendation dated 07 July 2004. As the approving authority, AFLCMC/WNU maintains OSS&E responsibility. Units are authorized to use the AC-9 as a substitute for the T-9AF or LRU-14-series life rafts. (T-1)

2.14.3. KC-135 Escape Slide. Lead Command—AMC. AFE is responsible for removal and installation on KC-135 only. AFE will only remove and install for periodic inspection of escape slides. Maintenance Electrical and Environmental sections or outside contracts will remain responsible for maintenance of air/nitrogen cylinder. (T-1)

2.14.4. C-17/A life raft assemblies. Lead Command—AMC. C-17A life rafts are logistically managed by HQ AMC/A4RM with the assistance of HQ AMC/A3TL. MAF AFE units needing assistance ordering C-17A operational raft replacements or training rafts will contact their respective MAJCOM AFE office who will then contact HQ AMC/A3TL for guidance and assistance. AFTO 22 submissions on the C-17A raft must be filled out in the Microsoft WORD version. (T-1)

2.15. Personnel Parachute Systems, Torso Harnesses, Restraint Devices, and Deceleration Devices.

2.15.1. Personnel Parachute Systems, Torso Harnesses, Gunners Belt, and Restraint Devices. These items will be inspected and maintained IAW appropriate TOs and MAJCOM directives. (T-1)

2.15.2. Preflight inspection of personnel parachute or torso harness is the responsibility of the user. (T-1)

2.15.3. Ensure access is restricted in the parachute shop/section to personnel directly involved in the parachute packing operations. This is to prevent tampering, damage, and or contaminants getting on parachute assemblies. Visitors conducting official business will be kept to minimum and for short duration to minimize opportunity for distraction. Facility space used for packing parachutes will not be used as thorough fare or passageway to other sections of the facility. Doors entering packing areas will be locked during packing operations and only AFE activities will occur within the space. (T-1)

2.15.4. Ensure compliance with AFI 11-410, *Personnel Parachute Operations*, and AFJ 13-201I, *Joint Airdrop Inspection Records, Malfunction/Incident Investigations, and Activity Reporting*, as applicable. (T-1)

2.15.5. Personnel restraint harnesses will remain with the aircraft during depot-level maintenance. (T-1)

2.15.6. Egress elements are responsible for removal and installation of integrated parachutes, survival kits and oxygen connectors as outlined in applicable aircraft Job Guides. (T-1)

2.15.7. Torso Harnesses (PCU-15/P or -16/P Series). Lead Command—ACC.

2.15.8. Restraint Devices (PCU-17/P and HBU-6/P Safety Strap). Lead Command—AMC. The PCU-17/P with the HBU-6/P safety strap is the only restraint device authorized for use in fixed wing aircraft (i.e., C-17, C-130, KC-135, etc.). (T-1)

2.15.9. Air Warrior Personal Survival Gear Carrier (PSGC)/Personal Restraint Tether (PRT). Lead Command—AFGSC. The combination survival vest and tether system is used in the UH-1. (T-1)

2.15.10. ACES II Drogue System. Lead Command—ACC. Maintain accurate copies of AFTO Form 392, *Parachute Repack Inspection and Component Record*, (or computer generated equivalent), on ACES II Drogue parachutes, and reference copies on ACES II Personnel Recovery Parachutes. Note: Computer software database forms may be used in lieu of AFTO Form 392. (T-1)

2.16. Personnel Parachute, Torso Harness, and Restraint Harness Accessories.

2.16.1. Personnel parachutes and torso harnesses

2.16.1.1. Personnel back style parachutes will be equipped with the following applicable items, i.e. emergency locator beacons, automatic releases, emergency bailout oxygen cylinders, hook-blade knives, oxygen connector bracket and Survival Kit (SRU-16/P). Not applicable to AFSOC or units supporting AFSOC missions. All AFSOC configurations must be approved through AFSOC/A3TL. (T-1)

2.16.1.2. Ejection seat torso harnesses will be equipped with the following applicable items, i.e., oxygen connector bracket and Survival Kit (SRU-16/P). Not applicable to AFSOC or units supporting AFSOC missions. (T-1)

2.16.1.3. Restraint harnesses will be equipped with oxygen connector brackets.

2.16.2. Personnel Lowering Device (PLD). Lead Command—ACC.

2.16.2.1. Group or deployment commanders have the authority to determine the day-to-day use of the PLD. The PLD usage decision process should consider the mission terrain (i.e., mountainous, rough terrain, heavily wooded areas, etc.), flying time over terrain, and the various uses of the PLD in addition to its intended purpose. AETC units do not require PLDs at any time. (T-1)

2.16.2.2. If PLDs are not worn on a daily basis, sufficient quantities will be stored properly in the unit's mobility package in serviceable condition. (T-1)

2.16.2.3. If units possess PLDs as a requirement but they are not currently installed, the harness must still be configured for installation of PLD (i.e. PLD reinforcement webbing

installed.). Additionally, the harness must be refit once the PLD is installed. This paragraph is not applicable to AETC units. (T-1)

2.16.3. Emergency Oxygen Cylinders. 1P0X1 personnel are responsible for the visual inspection of emergency bailout oxygen cylinders needed for back style parachutes used on bomber and T-38 aircraft. (T-1)

2.16.4. Universal Water Release System (UWARS). B-52 AFE support agencies are highly encouraged to, but are not required to install the PCU-63(V)1/P UWARS on spare and/or non-ejection back style parachutes. (T-1)

2.16.5. MXU-22/P Inflatable Lumbar Support Pad. Use of the lumbar support will be limited to those provisions outlined in TO 14P3-12-1, TO 14D3-11-1, and TO 14-1-1. (T-1)

2.16.5.1. Unit flight surgeons will be consulted for optimal use and placement of the lumbar support pad. (T-1)

2.16.5.2. When installed the lumbar support pad will be inspected IAW appropriate TO and concurrent with item on which installed. (T-1)

2.17. Survival Kits, Survival Vests and Aircrew Body Armor.

2.17.1. Scope and intent. The intent is to ensure requirements to survive an isolating event are met and to standardize components installed in all survival kits and survival vests across the Total Force. Survival components have been selected to meet the need of the survivor from a global survival and recovery perspective. (T-1)

2.17.1.1. SERE and AFE functional communities share the decision making process to select and approve survival components to be installed in AF survival kits/vests. The SERE community has the responsibility and expertise to determine which survival components should be installed based on the needs of the survivor in the post egress environment. The AFE community has the responsibility and expertise to determine which survival components can be integrated, installed, procured, sustained, and to define placement and configuration control with regard to applicable kits/vests. Selection and installation of survival components must be approved by both SERE and AFE functional leaders with coordination from AFLCMC as applicable. Lead MAJCOM will coordinate sustainment requirements with AFE sustainment activity to ensure out-year support of systems and system integrity. (T-1)

2.17.1.2. Mandatory survival components. Mandatory components will be used across the Total Force as prescribed by technical orders, to include stated exceptions. All mandatory components will be made available to all aircrew for all flying missions. Duplication of survival components is authorized to ensure aircrews have required items no matter which configuration of equipment is used. (T-1)

2.17.1.3. Optional survival components. MAJCOMs will standardize and approve all optional items installed in survival kits/vests. MAJCOMs will address sustainment, inspection, and storage requirements of these items in their supplements. (T-1)

2.17.1.4. Modernization Process. Requests for new survival components must be vetted through SERE, AFE CFM, AFLCMC, all MFMs and appropriate test agencies. Requesting MAJCOM is responsible for ownership and funding of the initial acquisition, development, testing, and fielding process. Lead MAJCOM will ensure appropriate

AFMC function is engaged to support modernization efforts. Note: Funding for initial acquisition does not include funding for the initial fielding of the new item(s). This initial acquisition funding is only the initial funding required to establish the acquisition process. (T-1)

2.17.1.5. Waiver authority for the selection and substitution of non-mandatory survival components is MAJCOM/A3. The MAJCOM/A3 may delegate to the 3-digit level only. (T-1)

2.17.1.6. Only authorized and approved survival kits, survival vests, and aircrew body armor properly configured and maintained will be worn or used. Inspections will be accomplished IAW appropriate TO and MAJCOM directives. (T-1)

2.17.1.7. When the survival vests or survival kits are carried on commercial airlines, remove the following items IAW TO 00-20-1: Signal, smoke and illumination, MK-13 or MK-124; Signal kit, personnel distress, A/P 25S-5A; container, waterproof, with matches; and knife, pocket.

2.17.2. Survival Kits. (T-1)

2.17.2.1. CNU-129/P Survival Kits. Lead Command—AFGSC. Units maintaining CNU-129/P survival kits for B-52 aircraft will ensure survival kits are clearly marked with crew position abbreviation (P, CP, EW, N, G, or RN) and local control number. (T-1)

2.17.2.1.1. Critical parts inspections on the CNU-series survival kits will be documented in FERMS. (T-1)

2.17.2.1.2. AFE sections requiring maintenance support for repair of survival items such as repair of the CNU-129/P kit will accomplish the applicable forms and forward items to the appropriate maintenance activity for repair or overhaul. The AFE Flight Chief or contractor leads will coordinate with maintenance activities to ensure inspection/maintenance capability. All equipment returned to the AFE section from maintenance support activities will be given a quality acceptance inspection. (T-1)

2.17.2.2. Parachute Spacer Kit (PSK). Lead Command—AFGSC. PSK will be manufactured locally using fabrication instructions published in TO 14S1-3-51. When used, PSKs will be attached to the parachute harness by engaging both ejector snaps and attaching them to the accessory "D" rings of the parachute, and the PSK will remain attached to both sides during parachute descent and/or emergency ground egress except for tree and power line landings. (T-1)

2.17.2.3. MA-1 and MA-2 Survival Kits. Lead Command—ACC. MA-2 kits may be used in lieu of MA-1 kits but due to different life raft sizes MA-1 kits are not a suitable substitute for MA-2 kits. (T-1)

2.17.3. Survival Vests.

2.17.3.1. Commanders will incorporate guidance regarding survival vest wear and survival component placement (i.e. PRC-90, PRC-112 and CSEL radios) into local AFE supplements. Survival vests will be worn for all cross-country missions, contingencies and combat exercises. (T-1)

2.17.3.2. On bomber aircraft, wear of the survival vest during local sorties and cross country missions will be at the discretion of group commanders (or equivalent) based on risk management, and procedures published in AFI 11-2MDS-Specific, Volume 3, Chapter 8 (Local Procedures). Survival vest will be worn for all contingencies and combat exercises. (T-1)

2.17.3.3. The location of pockets on survival vests will be standardized to the maximum extent possible. Units must pay special attention to the location of survival vest pockets to ensure AFE does not interfere with aircraft controls. (T-1)

2.17.3.4. Survival vests in storage for deployment commitments will be configured to the maximum extent possible. (T-1)

2.17.3.5. Air Force District of Washington (AFDW) Only. The 1 HS/CC will determine when survival vests (or kits) are required based upon local mission needs. The commander will consider remote flying areas and rescue recovery time. If the commander determines that survival vests are not required based on mission needs, the Flight Engineer is authorized to use the gunner's belt for duties when movement within the cabin of the aircraft is required. (T-1)

2.17.3.6. Air Ace™/Ace Advantage™ [Air Advantage™] Survival Vest. Lead Command—AMC. Until a new system is approved and supported by the AFLCMC/WNZ, Robins AFB, the Air Ace™/Ace Advantage™ [Air Advantage™], from Advantac, Inc (formally Survival Incorporated and Ultimate Survival, Inc.) is the primary integrated survival vest and aircrew body armor for LFA aircrew. (T-1)

2.17.3.7. SRU-21/P survival vest. Lead Command—ACC.

2.17.3.8. Air Save Survival Vest. Lead Command—ACC.

2.17.3.9. Air Warrior (AW). Lead Command—AFGSC

2.17.3.9.1. Utilization of the AW Primary Survival Group Carrier (PSGC) leg restraint straps is mandatory. (T-1)

2.17.3.9.2. The PSGC is approved for use as an insertion and extraction device for Search and Rescue (SAR) personnel. (T-1)

2.17.3.9.3. For SAR insertion operations, attach PSGC to the hoist using a locking carabineer attached directly to the PSGC front lifting loops. The carabineer must meet the carabineer requirements for ANSI Z359.1 (tensile strength 5000 lb (22.2 kN), gate face 220 lbs, (1 kN), and side gate strength 350 lbs. (1.55 kN). (T-1)

2.17.3.9.4. The Personal Restraint Tether (PRT) is used for securing personnel to the aircraft. The PRT will be connected to PSGC by means of a P-070 Stainless Steel Pear Link and Snap Link (locking carabineer) to the upper back retention loop. (T-1)

2.17.3.9.5. Blackhawk Tactical SERPA holster/belt system™ is approved as an alternative holster system used to carry M-9 pistol on the PSGC and thigh configurations to achieve the required magazine retainability. Aircrew members will continue to use the Air Warrior "shoulder rigging" holster/assembly if they choose to wear the holster in the shoulder configuration. (T-1)

2.17.4. Aircraft Minimum Survival Kit (MSK). Lead Command—AMC.

2.17.4.1. MSKs are mandatory when life rafts are not installed during PDM input from stateside locations. Therefore, during aircraft ferry and depot deliveries, use the MSK as a means of providing minimum signaling and survival component needs. MAJCOMs have the option of using a survival vest as a substitute for the MSK during PDM inputs (vests are required when carrying parachutes aboard the aircraft). (T-1)

2.17.4.2. MSK components are listed in this publication (see **Table 2.5**). Place these survival components in a locally purchased or manufactured metal or fiberglass container, or equivalent, to provide protection of survival items. (T-1)

2.17.4.3. Inspect the MSK on a one-year cycle. Time change items and munitions installed in MSKs going to depot facilities will have a minimum of one-year remaining on service life. When the MSK is carried on commercial airlines, remove the following items IAW TO 00-20-1: Signal, smoke and illumination, MK-13 or MK-124; Signal kit, personnel distress, A/P 25S-5A; container, waterproof (with matches); and knife, pocket. (T-1)

2.17.5. KC-10 Auxiliary Survival Kit (ASK). Lead Command—AMC. Each KC-10 AFE shop will build up one auxiliary survival kit (ASK) for installation on each assigned aircraft. To assemble this kit, line a 7-person accessory kit with 1-inch Etha Foam, ensuring it will float and pack with survival components (See Table 3.1.). Document inspections on applicable AFTO Forms and attach a DD Form 1574 to each kit annotating date inspected and date due next inspection, and ensure the time-change information is annotated on the reverse side of tag. Stencil each ASK with 1-inch black letters to read as follows: (T-1)

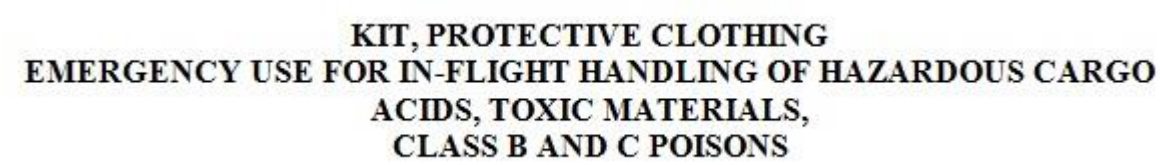
Figure 2.1. ASK.

2.17.6. Aircraft Protective Clothing Kit (PCK). Lead Command—AMC.

2.17.6.1. PCKs contain protective clothing for use by aircrew during emergencies aboard aircraft carrying hazardous cargo IAW Air Force Joint Manual (AFJMAN) 24-204, Preparing Hazardous Materials for Military Air Shipments. See Table 3.6. as a general guide for components. Units may build kits IAW AFJMAN 24-204 or purchase commercial kits meeting or exceeding AFJMAN 24-204 requirements. Units should contact base environmental or fire protection personnel to determine adequacy of commercial kits being considered. (T-1)

2.17.6.2. Inspect PCKs on a one-year cycle. Pack and seal PCKs in a locally manufactured metal, fiberglass, or plastic commercial container not to exceed 12 x 18 x 24 inches. Attach a DD Form 1574 to each container indicating the date inspected and date due next inspection. Stencil each PCK with at least l-inch letters with the following: (T-1)

Figure 2.2. PCK.



2.17.7. LFA Alert Mission Equipment.

2.17.7.1. Rations and water are placed aboard alert aircraft as a source of subsistence for aircrews during Emergency War Order (EWO) commitments. Requirements for subsistence items are shared responsibilities among AFE (delivery, uploading, and downloading), Operations and Plans (quantify as per mission needs), and Services (commissary liaison, approval agency, and memorandum of understanding [MOU]). Representatives from these organizations will establish a MOU. The MOU will specify and define responsibilities for forecasting, funding, requisitioning, storing, and issuing rations to best meet the unit's OPLAN 8010 mission. Responsibilities for subsistence rations and water are contained in AFI 25-101, War Reserve Material (WRM) Program Guidance and Procedures. Due to the lack of proper refrigerated storage facilities within AFE facilities, some rations will require courtesy storage at appropriate facilities. (T-1)

2.17.7.2. In addition to alert commitments, AFE may also be tasked to load rations, water, and flash blindness devices to support generated force sortie aircraft during EWO operations and when required by specific OPLANS. Units should establish procedures to upload and download these items and ensure availability of an aircraft storage location. This capability will be demonstrated during all IG inspections to the extent necessary to prove operational capability. (T-1)

2.17.7.3. KC-135 Series/KC-46A units tasked with OPLAN 8010 will establish aircraft live-aboard capability consisting of live-aboard kits (LAK), cold weather (CW) rations, water, and a carbon monoxide detector, as a minimum IAW AMCI 10-450, Volume 3, Aircraft Performance Factors (classified) and AFI 11-2KC-MDS Series Volume 3, Addenda A. Aircrew LAK specific items are satisfied by the issue of individual mobility bags. (T-1)

2.17.7.3.1. During live-aboard conditions, carbon monoxide detectors are required for all models of KC-135/KC-46A aircraft. (T-1)

2.17.7.3.2. MAF KC-135 and KC-46A units supporting OPLAN 8010 missions are authorized to purchase and will use the Fluke CO-220 Carbon Monoxide Meter. The CO-220 replaces the circa 1950's "Detector Gas Kits" maintained throughout the fleet. Meters being replaced are considered expendable items and are to be disposed of as such. (T-1)

2.17.7.3.3. The CO-220 meter can be purchased from any authorized source. The meter is used solely to support aircrew members' survivability aboard aircraft, therefore deemed an appropriate item to utilize Cost Per Flying Hour funds to purchase the meter. (T-1)

2.17.7.3.4. An annual commercial calibration is required on the meter. IAW 33K-series guidance, this is a "Note 64" item, indicating that calibration will be coordinated/funded through the Test, Measurement, and Diagnostic Equipment laboratory. Units will inspect meters on an annual basis, to align with calibration requirements, utilizing self-test guidance from the meter commercial instruction sheet. Track and document inspections using applicable documentation database and affix a completed NL555 to the item. Ensure batteries have a minimum of 80% usage remaining. Do not store meters with batteries installed. Meter location/operation will be covered in LL06. Units are authorized to purchase additional meter(s) for training use. Each meter will be stored/placed in a protective case to prevent damage while on aircraft, in transit, or in storage. (T-1)

2.17.7.4. For AFGSC Bomber ALERT missions, the following meal-ready-to eat rations and water quantities are required. B-2: Two (2) cases of rations and five (5) cases of flex pack water; B-52: Five (5) cases of rations and 12 cases of flex pack water. Water bulk stored for aircraft configuration during increased stages of alert will be inspected annually. (T-1) NOTE: AFE will coordinate with services personnel for identification and forecasting of additional WRM MREs to support this mission annually. (T-3)

2.17.8. Aircrew Body Armor. Lead Command—AFSOC. Exception: AFGSC is the lead command for the Air Warrior Body Armor System. (T-1)

2.17.8.1. MAF aircrew will have integrated survival vest and body armor available for aircrew going into harm's way. Safeguard survival vests and body armor by placing in a metal container (NSN 5140-00-226-9019), foot-locker (NSN 8460-00-243-3234), crush proof hard-sided plastic case, or equivalent. NOTE: The C-17A, C-130, and KC-46A AFE Locker/AFE rack meets this requirement. ABA will be inspected IAW TM-1-1680-377-13&P-6. (T-1)

2.17.8.2. Stencil each container with at least 1-inch letters (all caps) on top and front of container to read as follows: (T-1)

Figure 2.3. Aircrew Contingency Kit.

2.17.8.3. Stencil each container with at least 1-inch letters (all caps) on ends to read as follows: Command (e.g., AMC, USAFE, PACAF, AFRC, or ANG), Unit, Personnel Accounting and Local ID number. (T-1)

2.17.8.4. Units will record and track the following data: Size, Lot Number, Serial Number, and DOM. (T-1)

2.17.8.5. Aircrew Body Armor, Ace Advantage level IIIA, is available from Advantac Inc. (formerly Survival Incorporated and Ultimate Survival, Inc). Service life for this item is considered indefinite as long as it passes inspection and repair criteria. (T-1)

2.17.8.6. Inspect commercially procured ABA pre-positioned on aircraft, stored in mobility bins, and placed in storage every 365 days. Inspect ABA worn on a daily basis every 90 days. Inspect and maintain as follows: (T-1)

2.17.8.6.1. Inspect ABA pre-positioned on aircraft when the seal of the storage container is broken. (T-1)

2.17.8.6.2. Units are authorized to repair or replace parts. If damage is found beyond repair, the ABA will be condemned and the whole unit will be replaced. (T-1)

2.17.8.6.3. Inspect ABA cover for cuts, tears, fraying, seam separations, and loose stitching. Inspect the general condition of slide fasteners for proper operation, fast track fasteners and all other applicable hardware. Inspect waist band, shoulder straps, and hook/pile fastener tapes for frays or damaged areas and to ensure they function properly. Any damage noted will require an additional visual inspection of the ballistic panel inserts. (T-1)

2.17.8.6.4. Pay particular attention to ensure body panels are not wet (or water stained). (T-1)

2.17.8.6.5. Visually check manufacturers label to ensure all writing is fully legible. (T-1)

2.17.8.6.6. Reinstall panels. When replacing the panels, you must ensure the correct side is facing out and away from the wearers body. Failure to do so can cause extreme bodily injury and/or death. Each panel is labeled to indicate which side must face the wearer. (T-1)

2.17.8.6.7. ABA contaminated with undetermined substances will be removed from service, as it may degrade effectiveness and fire retardant properties. (T-1)

2.17.8.6.8. Inspect side panels as follows: ensure there are no open seams, tears, snags, wetness, and or stains. No repairs can be accomplished on these items and they must be replaced if found to be unserviceable. (T-1)

2.17.8.6.9. To retain fire retardant properties, ABA cover should not be washed more than 15 times. Document washings on applicable inspection record. (T-1)

2.17.8.6.10. The ballistic insert panels should never be submerged in water or machine washed. (T-1)

2.17.8.6.11. Soiled ABA covers may be spot cleaned by hand with warm water using mild soap (Ivory or equivalent). Remove ballistic insert panels prior to cleaning. Hang garment up to dry in a well-ventilated area. (T-1)

2.17.8.6.12. The ABA covers are machine washable (never dry clean). Remove ballistic insert panels prior to washing. Wash in warm, not hot, water (105F, +/- 5F). Close all zippers and pockets prior to machine washing. Tumble dry on permanent press setting or hang to air dry. Do not bleach. Do not iron or press. (T-1)

2.17.8.6.13. Repair of ABA covers will be limited to sewing of rips, loose stitching, seam separations, patching when necessary with like fabric, and replacing snaps and slide fasteners with like items. (T-1)

2.17.8.6.14. All repairs requiring sewing will be done with nylon thread conforming to specification V-T-295, type II, class 1, size E, nylon (NSN 8315-00-616-0079 or equivalent). Stitching shall be in accordance with type 301, federal standard 751, use 8 to 10 stitches per inch. Ends of stitching shall be backstitched not less than 1/2 inch. (T-1)

2.17.8.6.15. Hand sewing: AFE personnel may accomplish hand-sewn repairs. Holes and seam separations no larger than 1/2 inch may be repaired by hand sewing. Sew effected area with a double-threaded (V-T-295, type II, class 1, size E, nylon) thread. Trim excess thread to 1/2 inch minimum. (T-1)

2.17.8.6.16. Replacing parts: the following parts are replaceable and are available through the manufacturer: outer cover is supplied as a complete unit with both front and back shells. The front and back panels are supplied as a set. Side panels are individually supplied. Units desiring to procure additional accessories can arrange purchases by contacting the manufacturer. (T-1)

2.17.8.6.17. Marking: units will mark the ABA with a local control number on the upper left cover area. Stencil with subdued, indelible ink using 1/2 inch lettering. Do not mark ABA with unit designation, since aircrew may need this item in an escape and evasion environment. (T-1)

2.18. Aeromedical Evacuation Aircrew Member Support. Lead Command—AMC.

2.18.1. It is the responsibility of the local AFE program assigned to support the Aeromedical Evacuation Squadron(s) to individually issue AFE to AECMs for flying sorties and deployments. (T-1)

2.18.2. AECM unit commanders will, through active coordination with their supporting AFE unit, develop a process for AECMs to sign out AFE from their supporting AFE unit. AECMs will sign out AFE individually on AF Form 1297 or equivalent and be personally accountable and liable for assigned AFE. AECMs will return assigned AFE to the AFE unit upon completion of flying sortie and deployment. AECMs will ensure AFE receives inspection by a qualified AFE technician at established intervals. Funding of initial asset purchases is the responsibility of the AE unit. (T-1)

2.18.3. AFE unit commanders will, through active coordination with their supported AE unit, individually issue AFE to AECMs for all flying sorties and deployments. AFE units will maintain a pool of equipment (see below) to support the maximum number of AECM flyers/deployers at a given time. Funding of repair parts/replacement assets is the responsibility of the AFE unit. (T-1)

2.18.4. AFE requirements for AECMs:

2.18.4.1. Quick Don Oxygen Mask: Required for all flights and inspected IAW applicable technical orders by AFE personnel. (T-1)

2.18.4.2. Survival Vest: Required for combat flights only. Munitions are optional for AECM vests. Ensure alternative signaling devices are available IAW AOR SPINS. AFE transported via commercial air should have items removed that are considered hazardous or unacceptable by TSA standards. (T-1)

2.18.4.3. Aircrew Body Armor: Required for combat flights only. AFE will inspect ABA IAW applicable TO, guidance in this instruction and specific MAJCOM guidance.

2.18.4.4. Life Preserver Units (LPU). LPUs are required for overwater flights only. Passenger style life preservers are installed on all MAF aircraft and are available for AECMs to use in lieu of LPU-10/P. (T-1)

2.18.5. AFE AECM Deployment Support:

2.18.5.1. AECMs will depart home station with all required AFE items. AFE assets will not be staged at stateside hubs or deployed locations. (T-1)

2.18.5.2. Stateside locations where AECMs have stage/hub operations do not always have AFE support. Permanent party/host wing AFE functions at these locations will develop support agreements to ensure AECMs are supported. Support will include but not limited to equipment maintenance and security. Bases with multiple MDS and MAJCOMs will support this effort jointly. (T-1)

2.18.5.3. Overseas AE operations requiring UTC 9ALAE support do not possess a logistics detail (LOGDET) therefore tools, testers, benchstock, and facilities may be limited. AFE technicians deploying for this UTC will require deployed host wing support. Deployed AFE Superintendents/Flight Chiefs will ensure UTC 9ALAE technicians and AECMs have required AFE support. (T-1)

2.19. Passenger Demonstration Kits. Lead Command—AMC. (T-1)

2.19.1. Passenger-carrying aircraft will have a set of demonstration AFE mirroring all onboard individually issued passenger equipment (i.e., LPUs, EPOS, oxygen masks, etc.). Do not include LPU-6/P LPUs as part of the demonstration kit. (T-1)

2.19.2. To keep this equipment segregated from operational assets, store demonstration equipment in a “red” locally manufactured storage container. Stencil both the storage container and each piece of AFE "FOR DEMONSTRATION ONLY" in 1/2-inch black (or contrasting color) lettering. Factory stenciled items such as Training EPOS in original yellow bags already stenciled “FOR TRAINING ONLY” is acceptable. (T-1)

2.19.3. Store the demonstration EPOS in the yellow “training” pouch. (T-1)

2.19.4. Inspect and inventory on a 30-day cycle and as part of a Mission Termination Inspection (MTI). Because the items in the passenger demonstration kit are not considered serviceable for emergency use, the inspection and inventory consists of ensuring all the required items are contained within the kit, marked properly, and meet their intended purpose. (T-1)

Table 2.1. Cold Weather Equipment (T-2).

Temp at Destination or Operating Area	Minimum Equipment Recommended
+32 deg F to 21 deg F	Normal Flight Ops (flight suit, flight jacket, approved flight boots)
+ 20 deg F to +11 deg F	Silk-weight layer, flight suit, flight Jacket
+10 deg F to (+1) deg F	Mid-weight layer, flight suit, flight Jacket
(0) deg F to (-9) deg F	Silk-weight layer, mid-weight layer, flight sui

	flight Jacket (flight suit and jacket can be replaced with MCPS outer layer (top and bottom)
(-10) deg F to (-19) deg F	Silk-weight layer, mid-weight layer, MCPS outer layer (top and bottom)
(-20) deg F to (-29) deg F	Silk-weight layer, heavy-weight layer, Flight suit, MCPS outer layer (top and Bottom)
(-30) deg F to (-39) deg F	Mid- weight layer, heavy weight layer, MCPS outer layer (top and bottom)
(-40) deg F to (-49) deg F	Silk-weight layer, Mid-weight layer, heavy-weight layer, MCPS outer layer (top and bottom)
NOTE: These are minimum recommendations; aircrew members have the option to add clothing for additional protection. The CWU-104/P Overall and CWU-102/P Fleece Vest can also be worn to provide additional insulation/capability. Winter Ops (+32 deg and below) require carrying winter cap and winter gloves on person.	

Table 2.2. MCPS Identifiers.

Layer Description	Layer Definition
Silk Wt Layer	CWU-88/P Silkweight shirt, CWU-90 drawers
Medium Wt Layer	CWU-92/P Midweight shirt, CWU-94/P drawers
Heavy Wt Layer	CWU-96/P Heavyweight shirt, CWU-98/P drawers
Outer Shell	CWU-106/P Jacket, waterproof outershell, CWU-108/P trousers outershell

Table 2.3. Aircrew CBRN Equipment D-Bag Basis of Issue (BOI) (T-1).

Nomenclature	D-1 Bag (Mini) Quantities	D-Bag Quantities	Total Quantities
MBU-19/P, mask/filter manifold (N/A for AECM, units equipped with MBU-13/P, and UH-1)	1	0	1
CQU-7/P, blower and hose assembly (N/A for AECM, units equipped with MBU-13/P, and UH-1)	1	0	1
Pigtail adapter (N/A for AECM)	1	0	1
Inline filter assembly (N/A for AECM, aircrew equipped with MBU-13/P, and UH-1)	1	1	2
Filter, oxygen emergency assembly (N/A for AECM, units equipped with MBU-13/P, and UH-1)	1	1	2
Blower batteries, lithium (N/A for AECM, units equipped with MBU-13/P, and UH-1)	2	2	4
Aircrew coverall, JPACE or CWU-66/P	1	1	2

Strap fastener, blower battery cover (N/A for AECM, units with MBU-13/P, and UH-1)	2	2	4
Filter canister, C2A1 (N/A for AECM. Units equipped with MBU-13/P and UH-1, reduce to 2)	2	2	4
Protective gloves 7 mil butyl	1 pair	1 pair	2 pair
Glove inserts	1 pair	1 pair	2 pair
Cotton undergarments (optional)	1 set	1 set	2 sets
Disposable footwear cover, overboot	2 pair	2 pair	4 pair
Suspension straps	3	0	3
Aircrew cape, disposable	2	2	4
MXU-835/P, intercom unit	1	0	1
Battery, 9-volt (N/A for AECM)	1	1	2
Decontamination kit, M295	1	0	1
Masking tape 1” (required with cotton undergarments)	1	0	1
O-ring, emergency O2 (N/A for AECM and aircrew equipped with MBU-13/P)	1	1	2
Canister gasket, manifold (N/A for AECM)	1	1	2
Canister gasket, blower assembly (N/A for AECM and aircrew equipped with MBU-13/P)	1	1	2
Flight gloves (oversized)	1	1	2
MBU-13/P mask (E-3, E-8, RC/TC/VC/WC-135)	1	0	1
HGU-41/P hood (E-3, E-8, RC/TC/VC/WC-135)	1	1	2
Hood, M50 mask (AECM only)	1	0	1
Intercom unit adapter (C-17A only)	1	0	1
M-45, CBO mask (UH-1 only)	1	0	1

Table 2.4. KC-10 Auxiliary Survival Kit (T-1).

Noun	Quantity
Survival radio, PRC-series or CSEL HHR (w/spare battery)	1 each
Signal, smoke and illumination, MK-13 or MK-124	2 each
Light, marker, distress, MS-2000 (w/IR filter and flash guard) or equivalent	1 each
Compass, lensatic or magnetic	1 each
Mirror, signal, type I or II	1 each
First aid kit components (Survival Module, Medical Module, Tourniquet)	3 each
Survival kit (7-person life raft accessory container)	1 each
Whistle, police, plastic	1 each
Container, waterproof, w/matches	1 each
Knife, pocket	1 each
Water, drinking, flexible package (FPDW) or Water, drinking, canned	72 ounces or 60 ounces

	w/MROD
Desalinator, Reverse Osmosis, -35 (MROD) (optional)	1 each
Bag, water storage, 5-quart	1 each
Sponge, olive drab (NSN 7920-01-383-7936)	1 each
Bucket, bailing	1 each
Rations, survival, type ST	3 each
Repair kit, life raft, w/pliers	1 each
Aircrew survival manual	1 each
Packet, sea marker dye	1 each
Kit, fishing	1 each
Ointment, sunburn, preventive	7 each
Blanket, combat casualty (NSN 7210-00-935-6665)	3 each
Cord, nylon, type I, 30-ft length	2 each
Hood, winter, wool	7 each
NOTE 1: When using survival module NSN: 6545-01-534-0935, the following items are included and should not be duplicated: Mirror, signal, type I or II; container, waterproof, w/matches; whistle, police, plastic; and knife, pocket.	

Table 2.5. Minimum Survival Kit (T-1).

Noun	Quantity
Survival radio/Beacon	1 each
Spare Battery (as required)	1 each
Signal, smoke and illumination, MK-13 or MK-124 (note 1)	1 each
Light, marker, distress, MS-2000 or Equivalent	1 each
Compass, lensatic or magnetic	1 each
Mirror, signal, type I or II (note 1)	1 each
Combat-Application-Tourniquet (CAT)	1 each
Survival Module (note 2)	1 each
Medical Module	1 each
Aircrew Survival Manual	1 each
Bag, water storage, 5-quart.	1 each
Water, drinking, flexible package (FPDW), 4 oz	6 each
Container, waterproof, w/matches (note 1)	1 each
Whistle, police, plastic (note 1)	1 each
Knife, pocket (note 1)	1 each
NOTE 1: When the minimum survival kit is carried on commercial airlines, remove the following items IAW TO 00-20-1: Signal, smoke and illumination, MK-13 or MK-124;	

container, waterproof, with matches; and knife, pocket. NOTE 2: When using survival module NSN: 6545-01-534-0935, the following items are included and should not be duplicated: Mirror, signal, type I or II; container, waterproof, w/matches; whistle, police, plastic; and knife, pocket.

Table 2.6. Protective Clothing Kit (T-1).

Noun	National Stock Number	Quantity
Apron	8415-00-634-5023	2 each
Gloves, Rubber	8415-00-266-8675	2 pair
Gloves, Aramid	8415-00-092-3910	1 pair
Shears, Metal Cutting	5110-00-092-3910	1 each
Absorbent Pads	Local Purchase	As required
Bags, Plastic	8105-00-848-9631	3 each
Tape, Masking, 1"	7510-00-266-6712	1 roll
Dustpan, Rubber	7290-00-616-0109	1 each
Broom, Whisk, 10"	7920-00-240-6350	1 each
NOTE: Coordinate with base environmental or fire department personnel to ensure the commercial product meets or exceeds the absorbency capacity equivalent to five pounds of vermiculite. Neutralizers for corrosive agents are not part of this kit.		

Chapter 3

CONFIGURATION OF AIRCRAFT INSTALLED AND PRE-POSITIONED AIRCREW FLIGHT EQUIPMENT

3.1. General Aircraft Installed/Pre-positioned AFE Guidance.

3.1.1. All items in this chapter are waiver authority T-1 unless otherwise specified.

3.1.2. In the event installed AFE inspections come due while the aircraft is on alert status or away from home-station, follow guidance per TO 00-20-1.

3.1.3. For LFA, AFE will be loaded and configured per the aircraft-specific AFI 11-2MDS Series Volume 3, Addenda A. If no MDS Specific Addenda A is published, units will follow the aircraft configuration guidance in this instruction or applicable MAJCOM or unit supplement to this instruction. AETC and AFMC units have unique mission requirements and may deviate from this instruction per guidance provided by their respective MAJCOM AFE Management Office. (T-1)

3.1.4. When mission requirements dictate, Operations Group commanders (or equivalent) are authorized to increase aircraft equipment configurations provided the changes are in compliance with this instruction, applicable TOs, and allowance standard authorizations. (T-3).

3.1.5. Shortages noted by the aircraft commander or designated representative and recorded on AFTO Form 46 or 781A, *Maintenance Discrepancy and Work Document*, are investigated by the AFE section. The investigating activity should request assistance in locating shortages from the station where the loss was discovered. (T-3).

3.1.6. When equipment shortages are discovered which have not been documented on the AFTO Form 46 or 781A, the AFE section should investigate and take action IAW AFMAN 23-220, *Reports of Survey for Air Force Property*. For audit purposes, document all investigative actions taken. (T-3).

3.1.7. When AFE owned by other units is discovered during the inventory, notify the owning unit's AFE section, citing type aircraft, tail number, and type and quantity of equipment found. Do not retain AFE; forward it to the owning unit by Issue Priority Designator 02 (IPD-02). Copies of shipping documents will be forwarded to owning organizations. (T-3).

3.1.8. LFA, AFE will be pre-positioned to the maximum extent possible at all times to provide mission flexibility, especially when aircraft is away from home-station, unless otherwise specified by 11-2MDS Specific Volume 3, Addenda A. This will reduce excessive handling and damage of AFE. For multi-place/large frame aircraft, prepare AFTO Form 46 in duplicate. Maintain a file of the original and completed AFTO Forms 46 by aircraft tail number for all assigned aircraft for historical purposes. Purge file copies when a new AFTO Form 46 is produced due to equipment information changes. (T-1)

3.1.9. LFA MTIs or post-flight inspections will be accomplished on all unit aircraft at home station or deployed locations where AFE personnel are present. AFE will ensure these inspections are conducted after the final mission of the day or upon return to home station, temporary duty (TDY) locations, etc. In cases where aircraft maintenance procedures dictate

an AFE aircraft preflight, AFE preflight actions will be the same as those used during MTI/post-flight inspections. However, units required to perform AFE preflight inspections are not required to do both an AFE preflight and MTI/post-flight. MTI/post-flight inspections ensure equipment accountability, serviceability, and cleanliness pre-positioned AFE. AFE personnel will emphasize oxygen mask cleanliness and serviceability during MTI/post-flight (or Preflight, if applicable) and routine 30-day mask inspections. In the event that equipment discrepancies are discovered, initiate appropriate actions to correct the deficiency prior to the next flight. If AFE is suspected of misuse, abuse or shortages exist, the AFEO or AFES will notify the applicable commander for corrective actions. The aircrew pre-flight inspection will suffice in the event aircraft/aircrew are off-station with no qualified AFE support to accomplish MTI/post-flights. Units will use the back of the AFTO Form 46 or a locally developed work order (to include electronic media) to document these inspections. Maintain a copy of the documentation, by tail number, for a minimum of 90 days. Note: Aircraft on alert status are exempt from MTIs until after they are removed from alert status. (T-1)

3.1.10. If circumstances arise that require the removal of AFE from an aircraft at en route stations, the individual removing the equipment will annotate the remarks section of the AFTO Form 46 with their name, date equipment was removed, reason for removal, and all equipment disposition and destination information. That person will forward all of the information to the owning unit no later than 72 hours from removal. (T-3).

3.1.11. AFE will ensure all equipment inspections remain current for the duration of the scheduled mission when AFE support is not deployed. Ensure aircraft AFE will have a minimum of 60 days remaining on its current repack and inspection when departing home-station for tanker task force operations, integrated tanker unit deployments (ITUD), and 30 days for channel missions, business efforts, aircraft transfers, etc. (T-2).

3.1.12. AFE will establish procedures to notify applicable agencies IAW AFI 23-101, Para. 1.2.3.1.1, in the event of loss, suspected abuse, pilferage, or mishandling of equipment. AFE will investigate missing equipment if not returned/located within 30 days. Initiate a report of survey IAW AFI 23-101, Para. 5.4.2.6.4. as required. (T-3).

3.1.13. AFE will establish procedures to notify applicable agencies IAW AFMAN 23-110, Vol 2, Part 13, Chapter 1, in the event of loss, suspected abuse, pilferage, or mishandling of equipment. AFE will investigate missing equipment if not returned/located within 30 days. Initiate a report of survey IAW AFMAN 23-220, as required. (T-3).

3.1.14. Proper corrective actions for off-station losses will include messages by the owning organization to en route locations describing lost equipment (include serial numbers for accountable items), TDY duration, and route of off-station aircraft. Send an information copy of the message to MAJCOM AFE office. Document all investigative actions taken for audit purposes. (T-3).

3.1.15. AFE will transfer aircraft IAW TO 00-20-1, Preventive Maintenance Program General Policy Requirements and Procedures, this instruction and applicable AFI 11-2MDS-Series Volume 3, Addenda A. Gaining units will first contact the losing unit if an aircraft is transferred without the appropriate equipment. In the event the gaining and losing unit cannot resolve the discrepancy, the gaining unit will contact its respective MAJCOM for resolution. (T-1)

3.1.16. Equipment shipped for aircraft depot retrievals will have sufficient days remaining at the time of shipment to ensure no impact to flight returning home. (T-1)

3.1.17. When aircraft are permanently transferred, inspection records of installed AFE will be mailed or sent electronically to the gaining unit AFE section. (T-1)

3.1.18. Due to the lack of AFE expertise at some aircraft Programmed Depot Maintenance (PDM) locations, maintenance and equipment accountability can be provided only by the organization owning the aircraft. (T-1)

3.1.19. Upon PDM arrival of AFGSC aircraft, AFE will be shipped back to the owning unit where CA/CRL accountability will remain throughout the PDM duration. (T-1)

3.1.20. When aircraft are inputted for Unprogrammed Depot Maintenance (UDM), the owning organization will ensure equipment has a minimum of 45 days remaining on repack cycles prior to aircraft departure. Normally, aircraft are expected to return to the originating organization, but in the event aircraft are not returned to the originator, equipment custodians will initiate appropriate supply action to ensure equipment accountability. Transfer, receipt, and accountability procedures are set forth in AFI 23-101, and AFI 23-111, *Management of Government Property in Possession of the Air Force*. (T-1)

3.1.20.1. Sixty days prior to aircraft scheduled release from PDM, the organization losing the aircraft will take appropriate supply actions to ship equipment to the gaining base and transfer accountability. (T-1)

3.1.20.2. The gaining base will ship equipment, using DD Form 1149, *Requisition and Invoice/Shipping Document*, to PDM for installation on aircraft. Custodians must retain copies of all paperwork transactions in the event equipment is lost or misplaced. (T-1)

3.1.20.3. Upon receipt of the transfer documents, the gaining base supply EMS must coordinate with the AFE custodian to ensure the equipment has been received and to take appropriate actions to transfer CA/CRL accountability. Base supply will take no action to process equipment transfers until the AFE custodian verifies receipt of the equipment. (T-1)

3.1.21. When aircraft are inputted for Unprogrammed Depot Maintenance (UDM), the owning organization will ensure equipment has a minimum of 45 days remaining on repack cycles prior to aircraft departure. Normally, aircraft are expected to return to the originating organization, but in the event aircraft are not returned to the originator, equipment custodians will initiate appropriate supply action to ensure equipment accountability. Transfer, receipt, and accountability procedures are set forth in AFMAN 23-110, and AFI 23-111, *Management of Government Property in Possession of the Air Force*. (T-1)

3.1.22. Remove AFE from aircraft only for recurring inspections or as required for aircraft maintenance (i.e., major/minor ISOs, home-station checks (HSC), programmed depot maintenance (PDM), etc.) or as directed in MDS specific configuration instructions. Annotate AFTO Form 781A and AFTO Form 46 when AFE is removed from aircraft. (T-1)

3.1.23. Establish local procedures to document, control, retrieve, and maintain accountability of all transactions IAW AFI 23-101, Para. 5.4.2.7 and AFI 23-111. Retrieve AFE issued temporarily on AF Form 1297 or equivalent. AF Form 1297 will have a return date entered in applicable block on form. Annotate “Mobility” in the block marked “Return Date” on

each AF Form 1297 for individual mobility equipment issued to crew members IAW AFMAN 23-122, Para 5.3.6. (T-1)

3.1.24. AFE sections are authorized to use a log book in place of AF Forms 1297 for items taken to the support agencies. Flight Chiefs will ensure the log book is current and properly documented to track and account for all items. (T-1)

3.1.25. Ensure individual mobility equipment is issued, stored, and accounted for IAW AFMAN 23-122, Para 5.3.6.

3.1.26. Equipment exceeding day-to-day mission requirements, but required for contingencies, may be placed in "serviceable storage." (T-2).

3.1.27. Maintain equipment in serviceable storage in "ready for use" and "inspect prior to issue" status with time compliance technical orders (TCTO) and modifications completed. (T-2).

3.1.28. Follow inspection and storage procedures for "stored equipment" established in applicable TOs and publications without deviation; not to exceed 12 months. Use DD Form 1574 to identify equipment in serviceable storage. (T-2).

3.1.29. Units will establish procedures to fit or issue AFE based on local mission commitments and time constraints. (T-3).

3.1.30. When AFE has been removed or identified as being from transient aircraft, immediately notify the owning organization, citing type of aircraft, tail number, type and quantity of equipment removed, and present location. Mark assets for gaining AFE unit. Do not retain any AFE removed from en route aircraft. Return equipment to the owning unit using Shipping Priority Designator-02, as a minimum. (T-3).

3.1.31. Marking equipment with unit identification and related information helps prevent loss and expedites the return of AFE to the owning organization. When assigned, record serial numbers and/or use local control numbers on required inspection forms to assist AFE in identifying accountable items. (T-3).

3.1.32. During contingencies sanitize AFE aircrew would commonly use in an escape and evasion environment. AFE passenger support items such as multi-place life rafts and passenger LPUs do not require sanitization. (T-3).

3.1.33. AMC units will stencil all multi-person life raft cases, escape slide covers, accessory containers, and passenger life preserver cases with MAJCOM plus the unit designator of the owning unit (e.g., AMC/123 ARS). Stencil AMC-gained Air Reserve Component (ARC) equipment with "ANG" or "AFRC," as appropriate, plus unit designator of the owning unit (e.g., ANG/123 ARS). (T-2).

3.1.34. Remove or obliterate unit identification on AFE prior to turn-in or transfer of serviceable or repairable equipment. (T-2).

3.2. Aircraft Configurations.

3.2.1. C-20. Configure C-20 aircraft IAW AFI 11-2SAM/CSM, Volume 3, *Special Air Missions (SAM)Command Support Mission (CSM) Operations Procedures* and TO 1C-20A-1, *Flight Manual, USAF Series, C-20A Aircraft*. AFE installed on C-20 aircraft is Contractor Operated and Maintained Base Supply (COMBS) provided. AFE assists in the maintenance

of equipment. ACs may request additional equipment be positioned aboard aircraft to accommodate aircrew and passenger increases. However, units will ensure they do not exceed their total equipment authorizations per applicable allowance standards (AS). (T-1)

Table 3.1. C-20 AIRCRAFT AFE CONFIGURATION (T-1).

Minimum Required Equipment	Routine	Contingency	PDM Input (note 3)	Permanent Transfer
Mask, EROS, w/goggles	4	4	4	4
Mask, Firefighter, Smoke (note 1)	2	2	0	2
Mask, Therapeutic	2	2	2	2
Protective Breathing Equipment (PBE)	2	2	2	2
Mask, Passenger Oxygen (PAX) (note 2)	20	20	20	20
Emergency Passenger Oxygen System (EPOS)	19	19	0	19
Life Raft, 10-person (note 3)	2	2	0	2
Life Pres, Adult-Child (A/C)	19	19	5	19
Suit, Anti-Exposure, CWU-16/P	3	3	0	3
Kit, Minimum Survival (MSK)	0	0	1	0
Kit, Passenger Demonstration	1	1	0	1

NOTES:
1. Use Scott (AVOX) Commercial Smoke Mask, P/N 10100 or 10800 series.
2. These emergency items are not removed/installed by AFE personnel. Required inspections are accomplished by AFE personnel when technical orders or commercial manuals dictate.
3. Aircraft flying overwater to PDM will load 1 life raft.

3.2.2. C-21. Configure C-21 aircraft IAW AFI 11-2C-21, Volume 3, *C-21 Operations Procedures* and TO 1C-21A-1, *USAF Model, C-21A Aircraft Flight Manual*. AFE will maintain sufficient quantities of life rafts for C-21 aircraft to satisfy contingency requirements based on unit type codes (UTC) and to support overwater flights. Non-mobility units will maintain at least one T-9AF or LRU-14-series or AC-9 life raft for contingency purposes. ACs may request additional equipment be positioned aboard aircraft to accommodate aircrew and passenger increases. However, units will ensure they do not exceed their total equipment authorizations per applicable allowance standards (AS). (T-1)

Table 3.2. C-21 AIRCRAFT AFE CONFIGURATION (T-1).

Minimum Required Equipment	Routine	Contingency	PDM Input (note 1)	Permanent Transfer
Mask, 359-series w/goggles	2	2	2	2
Emergency Escape Breathing Device (EEBD) or Protective Breathing Equipment (PBE)	2	2	2	2

Mask, Passenger (PAX) Oxygen	11	11	11	11
Emergency Passenger Oxygen System (EPOS) (note 1)	10	10	0	10
Life Raft, T-9AF/LRU-14-series/AC-9 (note 1)	0	1	0	1
Life Pres, Adult-Child (A/C) (note 1)	10	10	0	10
Life Pres, LPU-10/P	0	2	0	2
Survival Vest	0	2	0	0
Body Armor	0	2	0	0
Suit, Anti-Exposure, CWU-16/P	As Required	2	0	2
Kit, Minimum Survival (MSK)	1	1	1	1
Kit, Passenger Demonstration	1	1	0	1
NOTE: 1. Aircraft flying overwater to PDM will load 1 life raft and two LPU-10/P LPUs to support. crewmembers. Exception: AECMs are authorized to wear the A/C LPU.				

3.2.3. VIP Special Air Missions (VIPSAM) AFE. Due to the unique mission and limited assets of the VIPSAM operations and other unique missions, each VIPSAM unit will provide their respective MAJCOM with an aircraft AFE configuration table for each MDS assigned and may deviate from the following tables. (T-1)

3.2.4. C-32A Aircraft AFE Configuration. Configure C-32A aircraft IAW Boeing document Number D706-3400-C-C32A, *C-32A Flight Attendant Manual United States Air Force*. AFE installed on C-32A aircraft is COMBS provided with the exception of the survival radio and MSK. (T-1)

Table 3.3. C-32 AIRCRAFT AFE CONFIGURATION (T-1).

Minimum Required Equipment	Routine	Contingency	PDM Input	Permanent - Transfer
Mask, EROS, w/goggles	4	4	4	4
Mask, 359 Quick Don	1	1	1	1
Mask, Therapeutic (note 1)	10	10	10	10
Protective Breathing Equipment (PBE) (note 1)	8	8	8	8
Mask, Passenger Oxygen (PAX) (note 2)	120	120	120	120
Survival Radio, CSEL or PRC 90-2	6	6	0	0
Survival Kit, Commercial	6	6	0	6
Life Preservers, Adult/Child (note 1)	66	66	66	66
Evacuation slide, flotation device (note 1)	8	8	8	8
Kit, Minimum Survival (MSK)	0	0	1	0

NOTE:
1. These items are maintained by Boeing/Gulfstream personnel due to contract obligations.
2. These emergency items are not removed/installed by AFE personnel. Required inspections are accomplished by AFE personnel when technical orders or commercial manuals dictate.

3.2.5. C-37A Aircraft Configuration. Configure C-37A aircraft IAW Gulfstream Operating Manual Chapter 2C: Outfitted Systems, *United States Air Force C-37A Aircraft*. AFE installed on C-37A aircraft is COMBS provided with the exception of survival radios and MSK. (T-1)

Table 3.4. C-37A AIRCRAFT AFE CONFIGURATION (T-1).

Minimum Required Equipment	Routine	Contingency	PDM Input	Permanent - Transfer
Mask, EROS, w/goggles	4	4	4	4
Mask, Firefighter, Smoke	3	3	3	3
Mask, Therapeutic	3	3	3	3
Protective Breathing Equipment (PBE)	2	2	2	2
Mask, Passenger Oxygen (note 2)	23	23	23	23
Survival Radio, CSEL or PRC 90-2	2	2	0	0
Life Preservers, Adult/Child (Note 1)	19	19	19	19
Life Raft, 12-person (note 1)	2	2	0	2
Kit, Minimum Survival (MSK)	0	0	1	0
NOTE: 1. These items are maintained by Boeing/Gulfstream personnel due to contract obligations. 2. These emergency items are not removed/installed by AFE personnel. Required inspections are accomplished by AFE personnel when technical orders or commercial manuals dictate.				

3.2.6. C-37B Aircraft AFE Configuration. Configure C-37B aircraft IAW Gulfstream G550 Operating Manual Chapter 2C: Outfitted Systems , *USAFC-37B Aircraft*. AFE installed on C-37B aircraft is COMBS provided with the exception of survival radios and MSK. (T-1)

Table 3.5. C-37B AIRCRAFT AFE CONFIGURATION (T-1).

Minimum Required Equipment	Routine	Contingency	PDM Input	Permanent - Transfer

Mask, EROS, w/goggles	4	4	4	4
Mask, Firefighter-Smoke	3	3	3	3
Mask, Therapeutic	3	3	3	3
Protective Breathing Equipment (PBE)	3	3	3	3
Mask, Passenger Oxygen (note 2)	23	23	23	23
Survival Radio, CSEL or PRC 90-2	2	2	0	0
Life Preservers, Adult/Child (note 1)	19	19	19	19
Life Raft, 13-person (note 1)	2	2	0	2
Kit, Minimum Survival (MSK)	0	0	1	0
NOTE: 1. These items are maintained by Boeing/Gulfstream personnel due to contract obligations. 2. These emergency items are not removed/installed by AFE personnel. Required inspections are accomplished by AFE personnel when technical orders or commercial manuals dictate.				

3.2.7. C-40B Aircraft AFE Configuration. Configure C-40B aircraft IAW Boeing document Number D765-40010-1, *C-40B Cabin Crew Manual United States Air Force*. AFE installed on C-40B aircraft is COMBS provided with the exception of survival radios and MSK. (T-1)

Table 3.6. C-40B AIRCRAFT AFE CONFIGURATION (T-1).

Minimum Required Equipment	Routine	Contingency	PDM Input	Permanent - Transfer
Mask, EROS, w/goggles	4	4	4	4
Mask, 359 Quick Don	1	1	1	1
Mask, Therapeutic (note 1)	8	8	8	8
Protective Breathing Equipment (PBE) (note 1)	5	5	5	5
Mask, Passenger Oxygen (PAX) (note 2)	76	76	76	76
Survival Radio, CSEL or PRC 90-2	2	2	0	2
Survival Kit, 46-man accessory kit (note 1)	2	2	0	2
Life Preservers, Adult/Child (note 1)	66	66	66	66
Life Raft, 46 person (note 1)	2	2	0	2
Kit, Minimum Survival (MSK)	0	0	1	0

NOTE:
1. These items are maintained by Boeing/Gulfstream personnel due to contract obligations.
2. These emergency items are not removed/installed by AFE personnel. Required inspections are accomplished by AFE personnel when technical orders or commercial manuals dictate.

3.2.8. VC-25A Aircraft AFE Configuration. Configure VC-25 aircraft IAW TO 1C-25(V)A-1, *Flight Manual USAF Series VC-25A Aircraft*. AFE installed on VC-25 aircraft is COMBS provided with the exception of the auxiliary survival kit components and MSK. (T-1)

Table 3.7. VC-25A AIRCRAFT AFE CONFIGURATION (T-1).

Minimum Required Equipment	Routine	Contingency	PDM Input	Permanent - Transfer
Mask, EROS, w/goggles	9	9	9	9
Mask, Firefighter, Smoke	3	3	3	3
Mask, Therapeutic	8	8	8	8
Protective Breathing Equipment (PBE)	5	5	5	5
Emergency Passenger Oxygen System, (EPOS)	103	103	15	103
Mask, Passenger Oxygen (PAX) (note 2)	205	205	205	205
Life Preservers, Adult/Child	107	107	15	107
Life Preserver, Infant Cot	2	2	0	2
Life Raft, evacuation slide (note 1)	7	7	7	7
Kit, Auxiliary	7	7	0	7
Kit, Minimum Survival (MSK)	0	0	1	0

NOTE:
1. These items are maintained by Boeing/Gulfstream personnel due to contract obligations.
2. These emergency items are not removed/installed by AFE personnel. Required inspections are accomplished by AFE personnel when technical orders or commercial manuals dictate.

3.2.9. Deleted

Table 3.8.

Table 3.9. B-52 Aircraft AFE Configuration.

Equipment Items (note 1)	AL	RT	PT	PDM	CT

Parachutes BA-21A	6	6	6	4	6
Parachutes BA-18/22 (note 1)	4	4	4	0	4
Survival Kits, CNU-129/P	6	6	6	4	6
Survival Kits, ML-4 (note 1)	4	As Required	4	0	4
Flash Blindness Goggles, EEU Series w/ Eye Patch	4	As Required	4	0	0
NOTE: 1. Commanders may specify when additional equipment is required to meet mission needs. Units may pre-position additional ML-4 kits, life preservers, and BA-18/22 parachutes to prevent aircrew from having to sign out additional equipment for each flight. 2. Mission Abbreviations: (AL)-Alert, (RT)-Routine Training, (PT) Permanent Transfer, (PDM) Programmed Depot Maintenance, (CT) Contingency Transfer					

Table 3.10. B-2 Aircraft AFE Configuration (T-1).

Equipment Items	AL	RT	PT	CT
Parachute, ACES II	2	2	2	2
Survival Kits, ACES II	2	2	2	2
Flash Blindness Goggles, EEU Series w/ Eye Patch	4	0	4	As Required
NOTE: Mission Abbreviations: (AL) Alert, (RT) Routine Training, (PT) Permanent Transfer, (CT) Contingency Transfer				

Table 3.11. T-38 Aircraft AFE Configuration (AFGSC Only) (T-1).

Equipment Items	T-38
Parachute, BA-22 (note 1)	2
Kit, Parachute spacer (note 2)	2
Survival Kit, CNU-129/P	2
NOTE: 1. Items may be installed or hand carried to aircraft by pilot. 2. Parachute Support Spacer Assembly may be substituted with for the parachute spacer kits for local missions only. Not applicable to AETC units.	

Table 3.12. RC, TC, OC, WC-135 and E-4B Aircraft AFE Configurations (IAW T.

Equipment Items	RC-135S Cobra Ball	RC-135U Combat Sent	RC-135V/W Rivet Joint	TC-135S Cobra Ball Trainer	OC-135B Open Skies	PDM Configuration
Restraint Harness	2	2	2	2	2	2

Exposure Suits CWU-16/P	30	36	36	36	36	0
Life Raft, F-2B w/ Inner/Outer Survival Kit	3 (note 7)	3 (note 7)	2	2	2	0
Life Preservers, LPU-10/P	36	36	36	36	36	0
Smoke Masks	3	3	2	2	2	2
EEBD/PBE (note 1)	3	3	2	2	2	2
Quick Don Smoke Mask w/anti Smoke Goggles	36	36	36	6	6	6
Passenger Oxygen Masks	0	0	0	0	21	0
EPOS (note 3)	20	20	20	40 (note 7)	30	0
Flash Blindness Goggles, EEU Series w/Eye Patch (note 2)	0	0	4	0	0	0
Aircrew Laser Eye Protection (ALEPS) (note 8)	6	6	6	6	6	0
Flash Blindness Goggles, MIL-G-635 w/Eye Patch (note 2)	0	0	3	0	0	0
Oxygen Mask, MBU-12/P	0	0	0	0	15	0

Equipment Items	**TC-135W Rivet Joint Trainer**	**WC-135C Constant Phoenix**	**WC-135W Constant Phoenix**	**E-4B**	**PDM Configuration**
Parachutes BA-18 or Restraint Harness	2	2	2	0	2
Exposure Suits CWU-16/P	36	30	30	0	0
Life Preservers, LPU 10/P	36	36	36	0	0
Life Preservers, Adult Child	0	0	0	121	0
Life Raft, F-2B w/Inner Kit	2	2	2	2 (note 4)	0
Outer Kit	2	2	2	7	0
Smoke Masks	2	2	2	6	2
EEBD/PBE (note 1)	2	2	2	7	2
Quick Don Smoke Mask w/anti Smoke Goggles	6	6	6	0 (note 6)	6
EPOS (note 3)	60 (note 7)	30	30	0	0
Flash Blindness	0	0	0	4	0

Goggles, MIL-G-635 w/Eye Patch (note 2)					
Oxygen Mask, MBU-12/P	0	0	0	154 (note 6)	0
Aircrew Laser Eye Protection	6	6	6	8	0
Meals-Ready-To-Eat (MREs/case) (note 5)	0	0	0	57	0

NOTE:
1. EEBD/PBEs will be placed in close proximity of each firefighting station. Some aircraft configurations may require one located at the navigators station.
2. Installed on aircraft only when deploying.
3. POKs may be used until EPOS are available (refer to paragraph 7.5.6.)
4. F-2B rafts may be removed and replaced by slide rafts as approved by the E-4B aircraft SPO.
5. MREs will be installed at the discretion of the aircraft commander for ALERT posture (refer to paragraph 7.6. for E-4B and paragraph 7.6.3. for RC-135V/W)
6. MBU-12/P mask will be installed on all oxygen regulating systems (142 positions) with 12 spares pre-positioned. Quick-don assemblies prepositioned in the flight deck are contractually controlled by Boeing.
7. Emergency Passenger Oxygen System and Life Raft (F-2B) quantities shown are IAW T.O. 1C-135(RC)-1, which reflects the aircrafts‘ maximum passenger capability. TC-135S and TC-135W can be authorized to be configured with 20 EPOS/2 Life Rafts for local sortie production when not structurally configured to transport passengers. AFE sections will be required to maintain the full complement of EPOS/F-2B Life Raft capability, IAW T.O. 1C-135(RC)-1, in the event of passenger transport contingency.
8. Installed on aircraft when threat exists (notification by Intel)

Table 3.13. HC-130J Aircraft AFE Configuration (T-1).

Minimum Required Equipment	Routine (Everyday Flights)	Contingency (Deployments)	PDM Input (note 14)	Permanent Transfer (note 15)
Mask, 358-series w/goggles	5	5	5	5
Protective Breathing Equipment (PBE) (note 1)	5	5	5	5
Emergency Passenger Oxygen System (EPOS) (note 2)	5	90	0	90
Kit, Protective Clothing (PCK)	1	1	0	1
Harness, Restraint, PCU-17/P with Safety Strap, HBU-6/P	5	5	4	5
Parachute, BA-18, BA-22 (note 4)	5	5	0	5

Life Raft, 20-Person (AC-20) (note 9)	2	4	0	2
Life Preserver, Adult-Child (A/C) (note 5)	5	90	0	90
Life Preserver, LPU-10/P (note 6)	5	5	0	5
Kit, Survival, ML-4 (note 4, 7)	0	0	0	0
Vest, Survival (note 3, 4, 8)	5	5	0	5
Suit, Anti-Exposure, CWU-16/P (note 4, 7)	5	5	0	5
Kit, Passenger Demonstration (note 10)	1	1	0	1
Kit, Minimum Survival (MSK) (note 11)	0	0	1	0
Life, Preserver, LPU-6/P (Infant Cot) (note 12)	4	4	0	4
Vest, Aircrew Body Armor (SAPI/ESAPI)	0	8	0	5
Sea Rescue Kits, MA-1 or MA-2 (note 13)	1	1	0	1

NOTE:

1. Three PBEs will be placed on the flight deck and two in the cargo compartment.
2. EPOS is the preferred passenger oxygen, smoke, and fume protection. As a minimum, each aircraft will have one EPOS per passenger regardless of planned flight altitude. Pre-position additional EPOS for increased scheduled PAX loads. EPOS is not required when flying local training missions and passengers are not aboard aircraft.
3. Survival Vest are not required for local training missions if ML-4 kits are onboard the aircraft.
4. Parachutes and survival vests are required on all missions. Exception: Refer to note 3 for survival vests. A minimum of one parachute, vest, and anti-exposure suit per crewmember will be prepositioned aboard the aircraft during increased scheduled crew loads. Place additional parachutes for airdrop missions, as required.
5. The A/C LPU is the preferred LPU. Preposition additional LPUs to meet increased scheduled PAX loads. As a minimum, each aircraft will have one LPU for each passenger. LPU-10/P LPUs are a suitable substitute for the A/C LPU for passenger use until A/C
LPUs are available. If LPU-10/P LPUs are used, AC or designated aircrew representative will ensure these LPUs are pre-fitted to passengers prior to take off.
6. LPU-10/P LPUs are required to integrate with AFE equipment and are designed for use by aircrew personnel. A/C LPUs are not compatible for use with parachutes and survival vests and must not be used as a substitute for these LPUs.
7. Only required on designated overwater flights. Quantities will match quantities of parachutes aboard aircraft.
8. Survival vests provide crewmembers the necessary survival items while waiting for rescue or return to duty. Quantities will match number of parachutes aboard aircraft.

9. When aircraft returns from maintenance inspections, or when life rafts are not delivered with the aircraft, local training flights may be flown provided they are not flown overwater. Exception: Take-Off, Approach, and Landing.
10. PDK's are not required when flying local training missions and passengers are not aboard aircraft.
11. Item required only for PDM flights. MAJCOMs have the option of using a survival vest as a substitute for the MSK during PDM inputs (vests are required when carrying parachutes aboard the aircraft).
12. Infant Cots are not required when flying local training missions and passengers are not aboard aircraft.
13. Mission/AC will dictate MA-1 or MA-2 requirement.
14. Aircraft flying overwater to PDM will load one 20-person life raft, five LPU-10/P LPUs, and five anti-exposure suits to support crewmembers, as required.
15. For inter- and intra-command transfer of aircraft, position AFE equipment on each aircraft IAW permanent transfer configuration. Units gaining transferred aircraft, including PDM aircraft, will contact the losing organization's AFE section and initiate transfer of required aircraft-installed AFE equipment and inspection records. The gaining AFE organization will conduct an aircraft acceptance inspection and forward a copy of discrepancies, to include any equipment shortages, to their respective MAJCOM IAW T.O. 00-20-1. Do not transfer aircraft with less than the required equipment. The losing organization will make up any necessary shortages from on-hand assets to ensure transferring aircraft has required equipment.

Table 3.14. E-3 Aircraft AFE Configuration (T-1).

Equipment Items	All Flights
Harness, Restraint, PCU-17/P	1
Life Raft, 20-Man	2
Accessory Container, F-2B, 20-man	2
Life Preservers, LPU- 10/P	40
Anti-Exposure Suits, CWU-16/P	40
Oxygen Mask, Scott 358 w/Goggles	5
EPOS	18
Fire Fighter's Smoke Mask	6
Oxygen Mask, AWACS	note 1
Oxygen Mask, MBU-10/P Series	22
Oxygen Mask, Passenger (note 1 and 2)	23 or 27
NOTE: 1. Passenger oxygen mask may be any combination of 249-358, 249-350 or AWACS Oxygen Mask. 2. If J-compartment seats are installed, four additional passenger oxygen masks are required.	

Table 3.15. E-8 Aircraft AFE Configuration (T-1).

Equipment Items	Routine	Contingency	PDM Input (note 1)	P-Sortie (note 2)	Training Aircraft (note 3)
Harness, Restraint,	1	1	0	1	1

PCU-17/P					
Life Raft, 25-Man	2	2	0	2	1
Accessory Container	2	2	0	2	1
Life Preservers, LPU-10/P	38	38	0	38	19
Anti-Exposure Suits, CWU-16/P	38	38	0	38	19
Oxygen Mask (Blue), Scott 358 w/Goggles	25	25	0	25	06
Oxygen Mask (Yellow), Scott 249-355 w/Goggles	36	36	0	36	33
Training CW-70	1	1	0	1	0
Training Fire Fighter‘s Mask	2	2	0	2	0
Fire Fighter’s Smoke Mask	7	7	0	7	4
NOTE: 1. All AFE is removed. Northrup Grumman (civilian crew) will supply their own AFE. 2. P-sortie occupies the front five seats only (pilot, co-pilot, engineer, observer and navigator). 3. Used for pilot training only.					

Table 3.16. Fighter/Trainer/Bomber Aircraft AFE Configuration (T-1).

Equipment Items	**A-10**	**B-1**	**QF-4**	**F-15**	**F-16 / QF-16**	**F-22**	**T-38**
Parachute, ACES II (note 1)	1	4	0	1 (note 1)	1 (note 1)	1	0
Parachutes BA-22 (note 3)	0	0	0	0	0	0	2 (note 2)
Parachute, F-4, Martin Baker	0	0	2	0	0	0	0
Survival Kits, ACES II (note 1)	1	4	0	1 (note 1)	1 (note 1)	1	0
Survival Kits, CNU-129/P	0	0	0	0	0	0	2 (note 4)
Kit, Parachute spacer	0	0	0	0	0	0	2 (note 2, 4)
Survival Kits, CNU-111/P	0	0	2	0	0	0	0
CRU-94, ITB, (note 1, 5)	0	0	0	1 (note 1, 2, 3, 5)	1 (note 1, 2, 3, 5)	0	0
CRU-60, Oxygen Connector (note 1, 5)	1 (note 2, 3)	4	2	1 (note 1, 2, 3, 5)	1 (note 1, 2, 3, 5)	0	2 (note 2)

CRU-120/A, ITB w/Regulator	0	0	0	0	1 (note 1)	0	0
CRU-122, ITB w/ Regulator	0	0	0	0	0	1	0

NOTE:
1. Two-seat aircraft will have two each parachutes, survival kits, and ITBs or CRUs installed.
2. Items may be installed or hand carried to aircraft.
3. The MBU-19/P and CQU-7/P will be used in place of the CRU-60, CRU-94, CRU-120, and CRU-122 for flight in a chemical environment.
4. CNU-129/P Survival kits are the primary kits for use on T-38 aircraft; however, PSKs may be substituted with parachute spacer kits or survival vests. One or two kits may be installed based on mission requirements and number of pilots in the aircraft.
5. CRU-60 and CRU-94 (with vest port plug installed) are interchangeable unless aircrew wears CSU-17/P.

Table 3.17. MC-12 Equipment Standards (T-1).

Equipment Items (AFE will maintain unless otherwise noted)	**Training**	**Contingency**	**PDM/Depot (note 5)**	**Ferry**
Mask, Quick Don/Cockpit (note 1)	2	2	2	2
Smoke Goggles/Cockpit (note 2)	2	2	2	2
EROS Mask with Oxygen Cylinder (note 3)	2	2	2	2
Emergency Passenger Oxygen System (EPOS) (note 4)	A/R	A/R	A/R	A/R
Life Preserver, LPU-10/P (note 6)	A/R	A/R	A/R	4
Life Preserver, Adult Child (A/C) (note 1)	A/R	A/R	A/R	7
Life Raft, 6-9 Person (note 1)	A/R	A/R	A/R	1
Kit Survival, Back Pack "Bugout" (note 7)	1	2	1	1
Anti-Exposure Suits, OTS (note 8)	A/R	A/R	A/R	1 per person
Integrated Survival Vest/Body Armor (note 9)	A/R	A/R	A/R	A/R
War Kit (Football) (note 10)	1	2	1	1
Cold Weather Bag	A/R	A/R	A/R	A/R

NOTE: (A/R = As Required)
1. Provided and maintained by contractor.
2. Aerox smoke goggles are located under each pilot seat.
3. One oxygen system will be attached to the seat of each back end aircrew position.
4. As a minimum, each aircraft will have one EPOS per passenger or additional aircrew.
5. Aircraft flying over water to PDM/Depot will use Ferry configuration.
6. An aircrew member will ensure an LPU-10/P is fitted and within easy reach before takeoff on overwater flights (outside gliding distance to land).
7. Survival kits (Bugout) will be pre-positioned on the aircraft. 1 kit per 2 aircrew.
8. The CWU-16/P is a suitable substitute if no OTS is available.

9. Will be available to be worn or stowed in aircraft as mission dictates.
10. Ammunition will be issued as required.

Table 3.18. MC-12 / Bugout Survival Kit (T-1).

Bugout Survival Kit (Note 3)	Quantity
HAWG/Liberty Bag, 100 Oz./3.0L Omega ABU – Part #: 61375	1
100 feet 550 Cord	1
Phoenix Fire Fly w/ 9-Volt battery	6
Aluminum Blanket	2
Flex Pack Water (note 1)	40 oz.
Camo Floppy Hat (note 2)	2
Poncho (note 2)	2
Glint Tabs	6
Survival Module	1
Medical Module	1
CAT Tourniquet (attach with 8/4 cord)	1
Rations	2
5” Knife (fixed blade)	2
Multi-tool	2
Mini-Mag-light with AA batteries & light filter	2
Compass	1
IR Chem. Lights with 3 Ft. 100 lb. cord	4
MS-2000M or Equivalent Strobe Light with AA batteries	2
AFTTP(I) 3-2.26	1
Spare AA batteries	8
Flare, MK-13/124	2
Flare, A/P 25S-5A(B)	0
NOTE: 1. Amount equivalent to 80 ounces of water. 2. Vacuum pack if possible. 3. Bugout Survival Kit not required for AFMC aircraft	

Table 3.19. MC-12 / AFE War-kit (Football) (T-1).

Equipment	Quantity
CSEL Radio (w/ Battery) (note 1)	2
Spare Radio batteries	2
GPS w/ batteries	2
Spare AA Batteries	4
9MM Magazines/Ammo (note 2)	See SPINS
GAU-5 Magazines/Ammo (note 2)	See SPINS
NOTE: 1. PRC-112B1/G suitable substitute 2. Issued as required	

Table 3.20. MC-12 / Cold Weather Bag (Supports 4 ea.

Equipment	Quantity
Insulated Parka Liner	4
Insulated Hood/Mask	4
Insulated Gloves	4
Motherlode Ex-Large Camelbak	4

Table 3.21. ML-4 (Guardian Angel Use Only) Real-World Use Survival Kit Minimum Components (T-1).

Noun	Quantity
One-man Life raft (LRU-16/P or equivalent)	1
Raft repair Plugs	1
Mirror, glass, 2 inches by 3 inches	1
Signal Panel or Sea Dye Marker	1

Table 3.22. ML-4 (Guardian Angel Use Only) Training Use Survival Kit Minimum Components.

Noun	Quantity
One-man Life raft (LRU-16/P or equivalent)	1
Raft repair plugs	1

Table 3.23. T-1 Aircraft AFE Configuration (T-1).

Equipment Items	All Flights
Protective Breathing Equipment (PBE)	3
Adult/Child LPU	4 (notes 1 & 2)
First-Aid Kit, General Purpose	1
Life raft, T-9/AC-9	1 (note 2)
Oxygen Mask, Scott 359 w/Goggles	3
EPOS	note 3
Survival Kit, AFSK-7	1
NOTE: 1. More LPUs may be uploaded as required. 2. Required only for overwater flights that exceed aircraft gliding distance to land. 3. Units will ensure EPOS is pre-positioned for each installed passenger seat.	

Table 3.24. RC-26 Aircraft AFE Configuration.

Equipment Items (AFE will maintain unless otherwise noted)	Training	Contingency	PDM/Depot (note 3)	Permanent Transfer
EROS Mask w/Goggle, Quick Don/Cockpit (note 1)	2	2	2	2
EROS Mask with Oxygen Cylinder/MSO Station (note 1)	1	1	1	1
Protective Breathing Device (PBE) or	2	2	2	2

(EEBD)				
Emergency Passenger Oxygen System (EPOS) (note 2)	A/R	A/R	A/R	A/R
Life Preserver, LPU-10/P (note 4)	A/R	A/R	A/R	4
Life Preserver, Adult Child (A/C) (note 5)	A/R	A/R	A/R	7
Life Raft, 9 Person, AC-9 (note 5)	A/R	A/R	A/R	1
Kit, Survival "Football" (notes 6 & 9)	1	2	1	1
Suit, Anti-Exposure OTS (notes 5 & 7)	A/R	A/R	A/R	1 per person
Integrated Survival Vest/Body Armor (note 8)	A/R	A/R	A/R	A/R
Cold Weather Bag	A/R	A/R	A/R	A/R

NOTES:
(A/R = As Required)
1. Provided and maintained by contractor.
2. As a minimum, each aircraft will have one EPOS per passenger or additional aircrew.
3. Aircraft flying over water to PDM/Depot will use Permanent Transfer configuration.
4. Aircrew members will ensure an LPU-10/P is fitted and within easy reach before takeoff on overwater flights (beyond gliding distance to land).
5. Only required for overwater flights (beyond gliding distance to land).
6. Survival kits will be pre-positioned on the aircraft. One (1) kit per three (3) aircrew members for contingency operations.
7. The CWU-16/P is a suitable substitute if no OTS is available.
8. Will be available to be worn or stowed on aircraft as mission dictates.
9. Ammunition will be issued as required.

Table 3.25. RC-26 Survival Kit (Football).

Survival Kit	Quantity
Hydration Pack, 100 Oz./3.0L Omega ABU – Part #: 61375 or Equivalent	1
100 feet 550 Cord	1
Phoenix Fire Fly w/ 9-Volt battery	6
Aluminum Blanket	3
Flex Pack Water (note 1)	1
Multi-cam Floppy Hat (note 2)	3
Poncho (note 2)	3
Paint, Face Camo	3
Glint Tabs	6
Survival Module	1
Medical Module	1
Combat Action Tourniquet (CAT) (attach with 8/4 cord)	1
Rations	3
5" Knife (fixed blade)	1
Multi-tool	1
Mini-Mag-light with AA batteries & light filter	3

Compass	1
IR Chem. Lights with 3 Ft. 100 lb. cord	3
MS-2000M or equivalent Distress Marker Light with AA batteries	1
AFTTP(I) 3-2.26	1
Spare AA batteries	12
Flare, MK-13/124	1
CSEL Radio (w/ battery) (notes 3 & 5)	1
Spare Radio batteries	1
GPS w/ batteries	1
Magazines/Ammo (note 4)	See SPINS
NOTES: 1. Amount equivalent to 120 ounces of water. 2. Vacuum pack if possible. 3. PRC-112G suitable substitute 4. Issued as required 5. Additional Survival Radios will be issued/installed as required for contingency operations per SPINS.	

Table 3.26. RC-26 Cold Weather Bag (Supports 3 ea.

Equipment	Quantity
Insulated Parka Liner	3
Insulated Hood/Mask	3
Insulated Gloves	3
Hydration Pack or equivalent	3

3.2.10. UH-1N Aircraft Configuration.

3.2.10.1. AFGSC units will pre-position their survival kit on board the UH-1N for all missions year round. (T-1)

3.2.10.2. AFDW (1 HS), AFMC (413 FTS), and PACAF (459 AS) will define their aircraft configuration and forward a copy to HQ AF/A3O-AI. (T-1)

3.2.10.3. AFE will ensure UH-1N aircraft on alert have all AFE correctly configured and ready for immediate contingency response. (T-1)

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DCS, Operations, Plans and Requirements

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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14S6-3, *TCTO Series*

14S10-2-2, *Operation and Service Distress Marker Light, Part No. ACR/MS-2000M and SDU-5/E*, 01 Sep 2006

15X-1-1, *Maintenance Instructions, Oxygen Equipment* , 01 Feb 2004

15X1-4-2-4, *Illustrated Parts Breakdown Types MD-1, MD-2, CRU-10/P and H-2 Emergency Bail-Out Oxygen Cylinders*, 15 Jan 2011

15X1-4-2-12, *Operation and Field Maintenance Instructions Emergency Bail-Out Oxygen Cylinder Assemblies*, 30 Jun 2004

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31R2-2PRC90-1, *Operation and Maintenance Instructions Radio Set AN/PRC90-2*, 29 Jan 2004

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31R2-2PRC112-1-1, *Operation and Intermediate Maintenance Instructions, Radio Set AN/PRC-112*, 1 Aug 2006

31R2-2PRQ7-1, *Radio Set AN/PRQ-7*, 15 May 2006

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31R4-2URT33, *TCTO Series*

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40W4-15-1, *Operation and Maintenance Instructions With Illustrated Parts Breakdown Manual Reverse Osmosis Desalinator MROD-35-LA-1*, 1 Sep 1993

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42C-1-12, *Quality Control of Chemicals*, 1 Mar 2012

Adopted Forms

AF Form 55, *Employee Safety and Health Record*

AF Form 847, *Recommendation for Change of Publication*

AF Form 1098, *Special Task Certification and Recurring Training*

AF Form 1297, *Temporary Issue Receipt*

AF Form 1522, *ARMS Additional Training Accomplishment Input*

AFTO Form 22, *Technical Order Improvement Report and Reply*

AFTO Form 46, *Prepositioned Aircrew Flight Equipment*

AFTO Form 255, *Notice Certification Void When Seal is Broken*

AFTO Form 334, *Helmet and Oxygen Mask/Connector Inspection Data*

AFTO Form 335, *Anti-G and Constant Wear Anti-Exposure Suit Inspection Record*

AFTO Form 392, *Parachute Repack Inspection and Component Record*

AFTO Form 781A, *Maintenance Discrepancy and Work Document*

DD Form 1149, *Requisition and Invoice/Shipping Document*

DD Form 1574, *Serviceable Tag --Materiel*

Abbreviations and Acronyms

ABFDS—Aerial Bulk Fuel Delivery System

ACBRN—Aircrew Chemical, Biological, Radiological, Nuclear

ACC—Air Combat Command

ACCA—Aircrew Contamination Control Area

AECM—Aeromedical Evacuation Crewmember

AERP—Aircrew Eye/Respiratory Protection

AFCAIG/CPFH—Air Force Cost Analysis Improvement Group/Cost Per Flying Hour

AFE—Aircrew Flight Equipment

AFEO—Aircrew Flight Equipment Officer

AFES—Aircrew Flight Equipment Superintendent

AFGSC—Air Force Global Strike Command

AFH—Air Force Handbook

AFI—Air Force Instruction

AFIND—Air Force Index

AFJI—Air Force Joint Instruction

AFJMAN—Air Force Joint Manual

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFOSH STD—Air Force Occupational, Safety, and Health Standard

AFPAM—Air Force Pamphlet

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFSC—Air Force Specialty Code

AFSC—Air Force Safety Center

AFSOC—Air Force Special Operations Command

ALEP—Aircrew Laser Eye Protection

AMC—Air Mobility Command

ANG—Air National Guard

ANGIND—Air National Guard Index

ARC—Air Reserve Component

ARMS—Aviation Resource Management System

AS—Allowance Standard

BFT—Basic Fighter Training

BOI—Basis Of Issue

CAF—Combat Air Force

CBRN—Chemical, Biological, Radiological, Nuclear

CCT—Combat Control Team

CFETP—Career Field Education and Training Plan

COTS—Commercial-Off-The-Shelf

COTS/NDI—Commercial-Off-The-Shelf/Non-Developmental Item

CSEL—Combat Survivor Evader Locator

DRU—Direct Reporting Unit

DSN—Defense Switched Network

ESUP—Escape System Upgrade Program

FAA—Federal Aviation Administration

FERMS—Flight Equipment Records Management System

FM—Functional Manager

FOA—Field Operating Agency

FOD—Foreign Object Damage

FTU—Formal Training Unit

HABD—Helicopter Aircrew Breathing Device

HEED—Helicopter Emergency Egress Device

HHQ—Higher Headquarters

IAW—In Accordance With

ID—Identification

JACKS—Joint Acquisition Chemical Biological Radiological Nuclear Knowledge System

JCAS—JHMCS Compatible ALEP Spectacles

JHMCS—Helmet Mounted Cuing System

JSETS—Joint SARSAT Electronics Tracking System

LFA—Large Frame Aircraft

LOGDET—Logistics Detail

LSSRB—Laser System Safety Review Board

MAJCOM—Major Command

MDS—Mission Design Series

MAF—Mobility Air Force

MFM—MAJCOM Functional Manager

N/A—Not Applicable

NAF—Numbered Air Force

NSN—National Stock Number

NVD—Night Vision Device

NGB—National Guard Bureau

OPLAN—Operations Plan

OPR—Office of Primary Responsibility

OSS&E—Operational Safety, Suitability, & Effectiveness

PACAF—Pacific Air Forces

PAI—Primary Aircraft Inventory

PCS—Permanent Change of Station

POC—Point of Contact

PSGC—Primary Survival Gear Carrier

RWA—Rotary Wing Aircraft

SEA—Survival Egress Air

SPO—Systems Program Offices

StF—Safe to Fly

STS—Special Tactics Squadron

STT—Special Tactics Team

TCTO—Time Compliance Technical Order

TDY—Temporary Duty

TEK—Traffic Encryption Key

TO—Technical Order

TPFDD—Time-Phased Force Deployment Data

UMD—Unit Manpower Document

USAFE—United States Air Forces Europe

UTC—Unit Type Code

Terms

Aircrew—The term aircrew is defined in AFPD 11-4, *Aviation Service*.

Aircrew Contamination Control Area (ACCA)—A self-sustaining aircrew only contamination mitigation control area that minimizes cross contamination to aircrew and is staffed by certified AFE personnel.

Aeromedical Evacuation (AE)—Movement of patients under medical supervision between medical treatment facilities (MTF) by fixed-wing aircraft by qualified AECMs.

Aeromedical Evacuation Crew Members (AECM)—Qualified flight nurses (FN), aeromedical evacuation technicians (AET), and unqualified student trainees under the direct supervision of a qualified instructor or FN, performing AE duties.

Aircraft Installed AFE—Any type of AFE that is an integrated part of the aircraft such as the ACES II Parachute, ACES II Survival Kit and multi-place life rafts loaded in aircraft wing wells.

Aircrew Flight Equipment (AFE)—AFE encompasses all equipment and personnel formerly known as aircrew life support, survival equipment, and is part of the 412A System (TO 00-25-06-2-1), or as designated by NGB/A3OS.

Aircrew Eye/Respiratory Protection (AERP) Equipment—AERP equipment is designed to protect the crewmember from toxic chemical exposure to the head, neck, face, eyes, and

respiratory tract. This equipment is designed to provide protection without imposing operational or physiological burdens, degrading mission capability, or combat effectiveness.

Arctic Flight—Any flight conducted above the 50th parallel of north latitude.

Antarctic Flight—Any flight conducted below the 56th parallel of south latitude.

D-1 Bag—One complete ACBRN Ensemble carried by aircrews when deploying to CBRN threat environment.

D-Bags—Full complement of ACBRN equipment BOI. Includes the contents of the D-1 bag, plus any remaining BOI items.

Ground Crew Contamination Control Area (CCA)—Area managed by Civil Engineering Readiness Flight to safely process ground crew personnel.

Large Frame Aircraft (LFA)—Any aircraft operating with multiple aircrew positions. These aircraft are typically used for airlift (passenger & cargo), aerial delivery, aerial refueling, airborne warning & control, aerial reconnaissance and long range strategic bombing. Some examples of LFAs would include but not be limited to C-5, C-17, C-130, C-21, E-3, MC-12, KC-10, KC-135, RC-135, RC-26 etc.. Aircraft types not typically associated with LFAs would be those more closely associated with the Fighter and RWA categories.

Logistics Detail (LOGDET)—The LOGDET defines standard passenger and equipment movement requirements for each UTC.

Manside AFE—Any type of AFE that is worn on the body of aircrew used to enhance the mission performance of the weapons system in the performance of their duties and/or any AFE that is worn on the body of aircrew or passengers that sustains life during aircraft operations and/or preserves life during aircraft mishaps.

Operational Support Crewmember—Personnel on flying status but not occupying a UMD "A" prefix position.

Overwater Flight—Any flight taking off or landing over water, exceeding power-off glide or auto-rotational distance from land.

Passenger (PAX)—Individual aboard aircraft for the purpose of transportation.

Pre-positioned AFE—Any type of AFE that is loaded on or in an aircraft but is not integrated into the aircraft or it’s subsystems such as quick don oxygen masks, back style parachutes, survival vest, aircrew body armor, etc.

Pilot Unit—Unit designated by the MAJCOM FM to handle LOGDET management responsibilities for a UTC. Pilot units are listed in the header record of each UTC and LOGDET.

Primary Aircraft Inventory (DoD)—The aircraft assigned to meet the primary aircraft authorization. Also called PAI.

Rotary Wing Aircraft (RWA)—Any aircraft which is partly or wholly sustained in the air by lift generated by wings (often called rotor blades) that revolve around a vertical axis. RWAs are most closely associated with helicopters and would include aircraft such as the CV-22, HH-60, UH-1, etc…

Theater (DoD)—The geographical area outside the continental United States for which a commander of a combatant command has been assigned responsibility.

Unit Manpower Document (UMD)—A detailed staffing list reflecting the distribution of staffing allocations into a finite structure of authorizations (by work center).

Unit Type Code (UTC)—A five-character, alphanumeric code that uniquely identifies each type unit of the Armed Forces.

Attachment 2

LEAD COMMAND SUBJECT MATTER EXPERT MAJCOMS

Figure A2.1. List of Primary Lead Command Subject Matter Expert MAJCOMs.

Item	AMC	ACC	AFSOC	AFGSC	PACAF
Multi-Place Life Rafts	X				
Individual Life Rafts		X			
Quick-Don Masks	X				
Flight Helmets – Fixed Wing		X			
Flight Helmets – Rotary Wing				X	
Ejection Seat Parachutes		X			
Back Automatic Ejection Seat				X	
Personnel Parachutes, Bailout	X				
Personnel Parachutes, Non-Standard		X			
NVDs		X			
Survival Vests		X			
Aircrew Body Armor			X		
Advanced Survival Radios		X			
Survival Kit/Vest Components		X			
ACBRN		X			
Constant-Wear Exposure Suits		X			
Quick-Don Exposure Suits	X				
Personnel Locator Beacons		X			
Flight Clothing		X			
Ejection Seat Survival Kits		X			
Multi-Place Life Raft Survival Kits	X				
Minimum Survival Kits	X				
Guardian Angel Systems		X			
Special Tactics Systems			X		
Nuclear Enterprise Systems				X	
Cold Weather Flight Clothing					X